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Part III

Environmental Protection Agency

Pulp, Paper, and Paperboard Industry Point Source Categories; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards; Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 430 and 431

[WH-FRL 1650-6]

Pulp, Paper, and Paperboard Builders' Paper and Board Mills Point Source Categories; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed regulation.

SUMMARY: EPA proposes regulations to limit the discharge of effluents and the introduction of pollutants into publicly owned treatment works from facilities that produce pulp, paper, and paperboard. The purpose of this regulation is to provide effluent limitations guidelines for "best practicable technology," "best available technology," and "best conventional technology" and to establish new source performance standards and pretreatment standards under sections 301, 304, 306, 307, 308, and 501 of the Clean Water Act. The intended effect of this action is to reduce the discharge of conventional and toxic pollutants discharged by the pulp, paper, and paperboard industry.

DATES: A period of sixty days from the date of publication in the **Federal Register** will be allowed for submission of comments on this proposal. Comments must be received by February 4, 1981.

ADDRESS: Send comments in triplicate to: Mr. Robert W. Dellinger, Effluent Guidelines Division, Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460, ATTENTION: EGD Docket Clerk, Pulp, Paper, and Paperboard Industry, (WH-552). A copy of the supporting information and all public comments submitted in response to proposal will be available for inspection and copying at the EPA Public Information Reference Unit, Room 2404 (Rear) PM-213 (EPA Library), 401 M St. S.W., Washington, D.C. 20460. The EPA information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Technical information and copies of technical documents may be obtained from Mr. Robert W. Dellinger, at the address listed above, or call (202) 426-2554. Information concerning the economic analysis and copies of the economic analysis documents may be obtained from Mr. Robert C. Ellis, Office of Analysis and Evaluation (WH-586), Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460, or call (202) 426-2617.

SUPPLEMENTARY INFORMATION:

Overview

The SUPPLEMENTARY INFORMATION section of this preamble describes the legal authority and background, technical and economic bases, and other aspects of the proposed regulations. It also presents a summary of comments on the draft technical development document, which was circulated in June of 1979, and solicits comments on specific areas of interest.

Many abbreviations and acronyms are used throughout this notice to avoid excessive narrative; a list of these and their definitions is set forth in Appendix A. Definitions of various terms, possibly unfamiliar to some readers, are also provided in that appendix.

Support for these proposed regulations is in four major documents available from EPA. Analytical methods are discussed in *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants* and in *Procedures for Analysis of Pulp, Paper, and Paperboard Effluents for Toxic and Nonconventional Pollutants.* EPA's technical conclusions are detailed in the *Development Document for Proposed Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Pulp, Paper, and Paperboard and the Builders' Paper and Board Mills Point Source Categories.* The Agency's economic analysis is found in *Economic Impact Analysis of Proposed Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Pulp, Paper, and Paperboard Point Source Category.*

Organization of This Notice

I. Legal Authority
II. Background
  A. The Clean Water Act
  B. Prior EPA Regulations
  C. Overview of the Industry
III. Scope of this Rulemaking and Summary of Methodology
IV. Data-Gathering Efforts
  A. Specifics of Technical Study
  B. Specifics of Economic Study
V. Sampling and Analytical Program
VI. Industry Subcategorization
VII. Available Wastewater Control and Treatment Technology
  A. Status of In-Place Technology
  B. Control Technologies Considered
VIII. Best Practicable Control Technology Effluent Limitations
IX. Best Available Technology Effluent Limitations
X. Best Conventional Pollutant Control Technology Effluent Limitations
XI. New Source Performance Standards
XII. Pretreatment Standards for Existing Sources
XIII. Pretreatment Standards for New Sources
XIV. Regulated Pollutants
XV. Pollutants and Subcategories Not Regulated
  A. Pollutants Excluded
  B. Subcategories Excluded
XVI. Monitoring Requirements
XVII. Costs, Effluent Reduction Benefits, and Economic Impacts
  A. Economic Impact Methodology
  B. Economic Impacts for Mill Types
  C. Economic Impacts for Product Sectors
XVIII. Non-Water Quality Aspects of Pollution Control
XIX. Best Management Practices
XX. Upset and Bypass Provisions
XXI. Variances and Modifications
XXII. Relationship to NPDES Permits
XXIII. Small Business Administration Financial Assistance
XXIV. Summary of Public Participation
XXV. Solicitation of Comments
Appendices:
  A—Abbreviations, Acronyms, and Other Terms Used in this Notice
  B—Toxic Pollutants Not Detected in Treated Effluents
  C—Toxic Pollutants Detected in Treated Effluents at Amounts Too Small to be Effectively Reduced by Technologies Known to the Administrator

I. Legal Authority

The regulations described in this notice are proposed under authority of sections 301, 304, 306, 307, 308, and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, 33 USC 1251 *et seq.*, as amended by the Clean Water Act of 1977, Pub. L. 95-217 (the "Act")). These regulations are also proposed in compliance with the Settlement Agreement in *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), modified 12 ERC 1833 (D.D.C. 1979).

II. Background

A. *The Clean Water Act.* The Federal Water Pollution control Act Amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," (Section 101(a)). By July 1, 1977, existing industrial dischargers were required to achieve "effluent limitations requiring the application of the best practicable control technology currently available" (BPT, (Section 301(b)(1)(A)). By July 1, 1983, these dischargers were required to achieve "effluent limitations requiring the application of the best available technology economically achievable (BAT which will result in reasonable further progress toward the

national goal of eliminating the discharge of pollutants," (Section 301(b)(2)(A)). New industrial direct dischargers were required to comply with section 306, new source performance standards (NSPS), based on best available demonstrated technology. New and existing dischargers to publicly owned treatment works (POTWs) were subject to pretreatment standards under sections 307(b) and (c) of the Act. While the requirements for direct dischargers were to be incorporated into National Pollutant Discharge Elimination System (NPDES) permits issued under section 402 of the Act, pretreatment standards were made enforceable directly against dischargers to POTWs (indirect dischargers).

Although section 402(a)(1) of the 1972 Act authorized the setting of requirements for direct dischargers on a case-by-case basis in the absence of regulations, Congress intended that, for the most part, control requirements would be based on regulations promulgated by the Administrator of EPA. Section 304(b) of the Act required the Administrator to promulgate regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of BPT and BAT. Moreover, sections 304(c) and 306 of the Act required promulgation of regulations for NSPS, and sections 304(f), 307(b), and 307(c) required promulgation of regulations for pretreatment standards. In addition to these regulations for designated industry categories, section 307(a) of the act required the Administrator to promulgate effluent standards applicable to all dischargers of toxic pollutants. Finally, section 501(a) of the Act authorized the Administrator to prescribe any additional regulations "necessary to carry out his functions" under the Act.

The Agency was unable to promulgate many of these toxic pollutant regulations and guidelines within the time periods stated in the Act. In 1976, EPA was sued by several environmental groups and, in settlement of this lawsuit, EPA and the plaintiffs executed a "Settlement Agreement," which was approved by the Court: This Agreement required EPA to develop a program and adhere to a schedule for promulgating, for 21 major industries, BAT effluent limitations guidelines, pretreatment standards, and new source performance standards for 65 toxic pollutants and classes of pollutants (see *Natural Resources Defense Council, Inc.*, v. *Train*, 8 ERC 2120 (D.D.C. 1976), modified 12 ERC 1833 (D.D.C. 1979)).

On December 27, 1977, the President signed into law the Clean Water Act of 1977. Although this law makes several important changes in the Federal water pollution control program, its most significant feature is its incorporation into the Act of many of the basic elements of the Settlement Agreement program for toxic pollution control. Sections 301(b)(2)(A) and 301(b)(2)(C) of the Act now require the achievement by July 1, 1984, of effluent limitations requiring application of BAT for "toxic" pollutants, including the 65 "toxic" pollutants and classes of pollutants which Congress declared "toxic" under section 307(a) of the Act. Likewise, EPA's programs for new source performance standards and pretreatment standards are now aimed principally at toxic pollutant controls. Moreover, to strengthen the toxics control program, Congress added a new section 304(e) to the Act, authorizing the Administrator to prescribe what have been termed "best management practices (BMPs)" to prevent the release of toxic or hazardous pollutants from plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage associated with, or ancillary to, the manufacturing or treatment process.

In keeping with its emphasis on toxic pollutants, the Clean Water Act of 1977 also revised the control program for non-toxic pollutants. Instead of BAT for "conventional' pollutants identified under section 304(a) (4) (including biochemical oxygen demand, suspended solids, fecal coliform, and pH), the new section 301(b)(2)(E) requires achievement by July 1, 1984, of "effluent limitations requiring the application of the best conventional pollutant control technology" (BCT). The factors considered in assessing BCT include the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived, and the comparison of the cost and level of reduction for an industrial discharge with the cost and level of reduction of similar parameters for a typical POTW (Section 304(b)(4)(B)). For non-"toxic", non-"conventional" pollutants, sections 301(b)(2)(A) and (b)(2)(F) require achievement of BAT effluent limitations within three years after their establishment, or July 1, 1984, whichever is later, but not later than July 1, 1987.

The purpose of these regulations is to provide effluent limitations guidelines for BPT, BAT, and BCT and to establish NSPS and pretreatment standards for existing and new sources (PSES, PSNS) under sections 301, 304, 306, and 307 of the Clean Water Act.

B. *Prior EPA Regulations.* EPA promulgated BPT, BAT, NSPS, and PSNS for the builders' paper and roofing felt subcategory of the Builders' Paper and Board Mills Point Source Category on May 9, 1974 (39 FR 16578; 40 CFR Part 431, Subpart A). EPA promulgated BPT, BAT, NSPS, and PSNS for the unbleached kraft, sodium-based neutral sulfite semi-chemical, ammonia-based neutral sulfite semi-chemical, unbleached kraft-neutral sulfite semi-chemical (cross recovery), and paperboard from wastepaper subcategories of the Pulp, Paper and Paperboard Point Source Category on May 29, 1974 (39 FR 18742; 40 CFR Part 430, Subchapter N, Subparts A–E). EPA promulgated BPT for the dissolving kraft, market bleached kraft, BCT (board, coarse, and tissue) bleached kraft, fine bleached kraft, papergrade sulfite (blow pit wash), dissolving sulfite pulp, groundwood-chemi-mechanical, groundwood-thermo-mechanical, groundwood-CMN papers, groundwood-fine papers, soda, deink, nonintegrated-fine papers, nonintegrated-tissue papers, tissue from wastepaper, and papergrade sulfite (drum wash) subcategories of the Pulp, Paper, and Paperboard Point Source Category on January 6, 1977 (42 FR 1398; 40 CFR Part 430, Subchapter N, Subparts F–U).

Several industry members challenged the regulations promulgated on May 29, 1974, and on January 6, 1977. These challenges were heard in the District of Columbia Circuit of the United States Court of Appeals. The promulgated regulations were upheld in their entirety with one exception. The Agency was ordered to reconsider the BPT BOD_5 limitation for acetate grade pulp production in the dissolving sulfite pulp subcategory (*Weyerhaeuser Company, et al.* v. *Costle*, 590 F. 2nd 1011; D.C. Circuit 1978). In response to this remand, the Agency proposed BPT regulations for acetate grade pulp production in the dissolving sulfite pulp subcategory on March 12, 1980 (45 FR 15952; 40 CFR Part 430, Subchapter N, Subpart K).

The regulations proposed in this notice include BPT, BCT, and revised BAT regulations and supersede prior NSPS, PSNS, and PSES regulations for the Builders' Paper and Board Mills and the Pulp, Paper, and Paperboard Point Source Categories, henceforth referred to as the pulp, paper, and paperboard industry.

C. *Overview of the Industry.* The pulp, paper, and paperboard industry is included within the U.S. Department of Commerce, Bureau of the Census Standard Industrial Classifications (SIC)

2611, 2621, 2631, and 2661. It is comprised of facilities where wood pulp, non-wood pulp, paper, and paperboard are produced and can be divided into three major segments: integrated, secondary fiber, and nonintegrated mills. A wide variety of products, including pulp, newsprint, coated printing papers, unbleached and bleached linerboard, tissue papers, glassine and greaseproof papers, cotton fiber papers, special industrial papers, and bleached and unbleached kraft papers are manufactured through the application of various process techniques. Mills where pulp alone or pulp and paper or paperboard are manufactured on-site are referred to as integrated mills. Those mills where paper or paperboard are manufactured but pulp is not manufactured on-site are referred to as nonintegrated mills. Mills where wastepaper is used as the primary raw material to produce paper or paperboard are commonly referred to as secondary fiber mills.

The four major steps in the production of wood pulp are wood preparation, pulping, washing and screening, and bleaching (if desired). The end result is a brown or white pulp that can be used in the manufacture of paper and paperboard products.

The initial step in the production of wood pulp is raw material preparation. A common sequence of operations employed during preparation of whole logs is slashing, debarking, washing, chipping, and storage. This may vary depending on the form in which the raw materials arrive at the mill.

After preparation, the wood is reduced to a usable form of fiber. This operation is called "pulping" and is accomplished by several possible combinations of mechanical and/or chemical "cooking" processes. The most common types of pulping processes employed are: 1) mechanical pulping (i.e., groundwood and thermo-mechanical) and 2) chemical pulping (i.e., alkaline (kraft and soda), sulfite, or semi-chemical processes).

After pulping, the brown stock (pulp fibers) is washed and screened. The screened rejects are then either repulped or discarded. Where a white or lightly colored pulp is required, an optional stage, bleaching, is employed.

In the bleaching process, the brown stock is decolored (brightened or whitened) through the use of chemicals such as chlorine, chlorine dioxide, sodium hypochlorite, zinc hydrosulfite, or sodium hydrosulfite. The mechanism of decoloring results from the removal or brightening of lignins and resins. After the brown stock is washed and screened, or bleached, it is stored for use in making paper or paperboard.

At secondary fiber mills, wastepaper is prepared to produce a stock to be used in the manufacture of paper or board products. Fibers suitable for papermaking result after wastepaper is cooked in a pulper, where it is repeatedly exposed to rotating impeller blades. Depending on the end product usage, heavily-printed wastepaper may be deinked. Ink and other nondesirable components are removed by flotation and washing using detergents, dispersants, fixing and softening agents, and other chemicals. If desired, these fibers can be bleached using chlorine, sodium hypochlorite, or chlorine dioxide; if wastepaper is high in groundwood content, peroxides or hydrosulfites are used. After washing and screening, the stock is stored prior to papermaking.

At all mills (integrated, secondary fiber, or nonintegrated) where paper or paperboard are produced, purchased pulp or pulp produced on-site is resuspended in water and blended with other components. The stock is then mechanically processed in beaters or continuous refiners to ensure that the necessary matting characteristics are provided to obtain the desired strength in the paper or paperboard. Another aspect of stock preparation is the addition of chemical additives. The most common chemical additives are alum and rosin (for sizing), fillers (clays, calcium carbonate, and titanium dioxide for opacity, smoothness, and brightness), resins (to improve wet strength), dyes, and starches (for improved strength, erasability, and abrasion resistance).

After the stock has been prepared to the specifications required to make the product, the sheet (paper) or plies (paperboard) are made. There are two principal methods to make paper or board: on a Fourdrinier or a cylinder machine. Both methods are similar with the major significant differences occurring in the "wet-end" formation process. On the Fourdrinier machine, the slurry (diluted pulp) flows from the headbox onto an endless moving wire screen where the sheet is formed and through which water drains by gravity and suction. On a cylinder machine, a revolving wire-mesh cylinder rotates in a vat of diluted pulp and picks up a layer of fibers which are deposited onto a moving felt. The cylinder machine has the capacity to make multi-layered sheets, which accounts for its principal use in the manufacture of paperboard.

Both types of machines are equipped with press and dryer sections. The sheet is transferred from the wire or felt to the press section where additional water is removed through mechanical means prior to drying. In the dryer section, the sheet or board is carried through a series of heated hollow steel or iron cylinder. Sizing or coatings can be applied at the dry end or on separate machines. Following the drying section, the sheet can be calendered for a smoooth finish and packaged for shipment.

The pulp, paper, and paperboard industry is a high water use industry. Major uses of water are similar industry wide although the amount used varies from segment to segment. The two methods of wastewater discharge include direct discharge to navigable waters and indirect discharge to a publicly owned treatment works (POTW). At some mills, recycle systems or evaporation techniques are used so that no wastewater is discharged. It has been estimated that wastewater discharges total 16.0 million cubic meters (4.2 billion gallons) per day. The largest contributor of wastewater is the intergrated segment, where discharges total about 14.0 million cubic meters (3.6 billion gallons) per day. Of the 218 operating mills in the intergrated segment for which technical survey responses were received, there are 183 direct dischargers, 26 indirect dischargers, 7 indirect/direct dischargers, and 2 mills where no wastewater is discharged. Of the 271 operating mills in the secondary fiber segment for which technical survey responses were received, there are 77 direct dischargers, 148 indirect dischargers, 2 indirect/direct dischargers, and 44 mills no wastewater is discharged. Total wastewater discharge from this industry segment is 0.95 million cubic meters (0.26 billion gallons) per day. Of the 143 operating mills in the nonintergrated segment for which technical survey responses were received, there are 76 direct dischargers, 57 indirect dischargers, 5 indirect/direct dischargers, and 5 mills where no wastewater is discharged. Total wastewater discharge from this industry segment is about 1.2 million cubic meters (0.32 billion gallons) per day.

The most important pollutants associated with the production of pulp, paper, or paperboard are: 1) toxic pollutants (chloroform, zinc, trichlorophenol, and pentachlorophenol, 2) conventional pollutants (BOD5, TSS, and pH), and 3) nonconventional pollutants (ammonia, color, resin acids, and bleach plant derivatives).

Wastewater characteristics differ from subcategory to subcategory due to the varying nature of processes

employed and/or products manufactured. In general the wastes are complex mixtures of natural and synthetic organic materials and inorganic chemicals. the wastes are high in BOD5 and TTS, with typical raw waste concentrations ranging from 150 to 900 mg/1 for BOD5 and from 250 to 2,000 mg/1 for TTS.

EPA estimates that there are 706 operating pulp, paper, and paperboard mills in the United States. Detailed technical information is available for 632 of these mills. These facilities range from large integrated kraft mills producing over 1,800 kkg/day (2,000 tons/day) to small nonintergrated mills where less than 1 kkg/day (1.1 tons/day) of product are made.

Pulp, paper, and paperboard mills are located throughout the United States. Historically, the industry has spread from the Northeastern U.S. to the North Central states and later to the Pacific Northwest. In the late 1930s, significant industry growth occurred in the Southern states.

During the past ten years, except during the recession of 1975, sales of paper and paperboard products have risen at a steady pace from $20.6 billion in 1969 to $55.4 billion in 1979. This represents a compound annual growth rate in sales of 10.4 percent. The industry after-tax return on sales during the period averaged 5.0 percent, slightly higher than the average for all manufacturing industries. After-tax returns on net worth have averaged 11.2 percent, or slightly below the average for all manufacturing industries. Capital investment expenditures increased from a low of $1.25 billion in 1971 to a high of $4.9 billion in 1979.

Several changes are projected for the industry. Though overall sales for paper and paperboard products are expected to rise, the demand for some product types may rise or fall disproportionately to that trend. For example, domestic newsprint production capacity is expected to increase dramatically. This will increase domestic sales and reduce the Nation's reliance on imports of newsprint which now total over half of the Nation's newsprint consumption. The paper and paperboard market share for non-deinked secondary fiber mills, on the other hand, is expected to decline. These smaller, less efficient mills have a competitive disadvantage due to their higher unit costs of production relative to the larger virgin fiber mills.

The Agency expects that closures will occur in the industry without the imposition of additional pollution controls. These closures are expected to occur in all three major segments of the industry due to two major factors. First, demand is declining in some product sectors causing marginal mills to close. Second, the industry is concentrating its operations in fewer and larger mills and closing the smaller, older, high cost mills. The production capacity lost through these closures will be replaced through utilization of excess or idle capacity at existing mills. In many product sectors, this idle capacity accounts for over 20 percent of the total capacity.

Though rising demand indicates the need to expand the industry's production capacity, the Agency expects most additions to industry capacity to be made through expansion of existing mills.

Several factors lead the Agency to believe that few new "green field" mills will be constructed. Most existing mills are built in such a way that on-site expansion is possible. They are also built with excess capacity included in part of the production line. Thus, capacity expansion can be accomplished simply by expanding the capacity of the remainder of the production line. This expansion option is less risky and less expensive than the construction of a new mill.

The construction of a new mill requires that a site be found that is suitable for the operation, has access to sufficient water, is close to raw material supplies, and is large enough to accommodate the mill operation. Finding such a site at a reasonable cost can be difficult.

III. Scope of this Rulemaking and Summary of Methodology

These proposed regulations expand the water pollution control requirements for the pulp, paper, and paperboard industry. In EPA's initial (May 1974 and January 1977) rulemaking, emphasis was placed on the achievement of BPT, BAT, and NSPS based on the control of familiar, primarily conventional, pollutants. In 1977, EPA proposed PSES based on compliance with general prohibitive waste provisions (42 FR 6476; 40 CFR Part 128 (now, Part 403)). By contrast, in this round of rulemaking, EPA's efforts are directed toward instituting BCT and BAT effluent limitations, new source performance standards, and pretreatment standards for existing and new sources that will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants.

In general, BCT represents the best control technology for conventional pollutants that is reasonable in cost and effluent reduction benefits. It replaces BAT for conventional pollutants. BAT represents, at a minimum, the best economically-achievable performance in any industrial category or subcategory and, as a result of the Clean Water Act of 1977, emphasis has shifted from control of familiar, primarily conventional, pollutants to control of a lengthy list of toxic substances. New source performance standards represent the best available demonstrated technology for control of all pollutants, and pretreatment standards for existing and new sources represent the best economically-achievable performance for control of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs, including management of sludge.

In the 1977 legislation, Congress recognized that it was dealing with areas of scientific uncertainty when it declared 65 pollutants and classes of pollutants "toxic" under section 307(a) of the Act. Those engaged in wastewater sampling and control had little experience dealing with these pollutants. In addition, these pollutants often appear and have toxic effects at concentrations which severely taxed available analytical techniques. Even though Congress was aware of the state-of-the-art difficulties and expense of "toxics" control and detection, it directed EPA to act quickly and decisively to detect, measure and regulate these substances. Thus, with the passage of the 1977 legislation, the focus of the Nation's water pollution control program was directed toward the control of pollutants for which there was relatively little knowledge or experience.

EPA's implementation of the Act required a complex development program, described in this section and subsequent sections of this notice. Initially, because in many cases no public or private agency had done so, EPA and its laboratories and consultants had to develop analytical methods for toxic pollutant detection and measurement, which are discussed under SAMPLING AND ANALYTICAL PROGRAM. EPA then gathered technical and finaicial data about the industry which are summarized under DATA–GATHERING EFFORTS. With these data, the Agency proceeded to develop these proposed regulations.

First, EPA studied the pulp, paper, and paperboard industry to determine whether differences in raw materials, final products, manufacturing processes, equipment, age and size of manufacturing facilities, water use, wastewater constituents, or other factors required the development of

separate effluent limitations and standards of performance for different segments of the industry. This study required the identification of raw waste and treated effluent characteristics, including: 1) the sources and volume of water used, the manufacturing processes employed, and the sources of pollutants and wastewaters within the plant, and 2) the constitutents of wastewaters, including toxic pollutants. (See INDUSTRY SUBCATEGORIZATION.) EPA then identified the constitutents of wastewaters which should be considered for effluent limitations guidelines and standards of performance, and statistically analyzed raw waste constituents, as discussed in detail in Section V of the Development Document.

Next, EPA identified several distinct control and treatment technologies, including both in-plant and end-of-process technologies, which are in use or capable of being used to control or treat pulp, paper, and paperboard industry wastewater. The Agency compiled and analyzed historical and newly generated data on the effluent quality resulting from the application of these technologies. The long-term performance, operational limitations, and reliability of each of the treatment and control technologies were also identified. In addition, EPA considered the non-water quality environmental impacts of these technologies, including impacts on air quality, solid waste generation, and energy requirements.

The Agency then estimated the costs of each control and treatment technology for the various industry subcategories from unit cost curves developed by standard engineering analysis as applied to the specific pulp, paper, and paperboard wastewater characteristics. EPA derived unit process costs from model plant characteristics (production and flow) applied to each treatment process unit cost curve (i.e., activated sludge, chemically-assisted clarification/sedimentation, granular activated carbon adsorption, mixed media filtration). These unit process costs were combined to yield total cost at each treatment level. After confirming the reasonableness of this methodology by comparing EPA cost estimates to treatment system costs supplied by the industry, the Agency evaluated the economic impacts of these costs. Costs and economic impacts are discussed in detail under the various technology options, and in the section of this notice entitled COSTS, EFFLUENT REDUCTION BENEFITS, AND ECONOMIC IMPACTS.

Upon consideration of these factors, as more fully described below, EPA identified various control and treatment technologies as BPT, BCT, BAT, NSPS, PSES, and PSNS. The proposed regulations, however, do not require the installation of any particular technology. Rather, they require achievement of effluent limitations representative of the proper application of these technologies or equivalent technologies. A mill's existing controls should be fully evaluated, and existing treatment systems fully optimized, before commitment to any new or additional end-of-pipe treatment technology.

The effluent limitations for BPT, BCT, BAT, and NSPS are expressed as mass limitations (kg/kkg or lbs/1000 lbs of finished product) and are calculated one of three ways: (1) by multiplying (a) maximum anticipated effluent concentrations determined from analysis of control technology performance data and (b) typical wastewater flow for each subcategory, (2) by multiplying (a) long-term average effluent loadings determined from analysis of control technology performance data and (b) a process or treatment variability factor, or (3) by multiplying (a) long-term average effluent concentrations determined from analysis of control technology performance data, (b) typical wastewater flow for each subcategory, and (c) a process or treatment variability factor. These basic calculations were performed for each regulated pollutant or pollutant parameter for each subcategory of the industry. Effluent limitations for PSES and PSNS are expressed as allowable concentrations in milligrams per liter (mg/l). Mass limitations are also provided as guidance for POTWs if mass limitations are imposed along with, or instead of, the concentration limitations.

IV. Data-Gathering Efforts

The data-gathering efforts involved several distinct, detailed activities which are summarized here. All aspects of the program are described in detail in Section II of the Development Document and Section I of the Economic Impact Analysis.

In general, data-gathering efforts were conducted by four principal means: 1) a review of the administrative record for the proposal and promulgation of prior EPA regulations; 2) surveys of the industry; 3) contact with representatives of State regulatory agencies, EPA regional offices, and EPA and private research facilities; and 4) a review of pertinent literature.

The administrative records relating to previous EPA regulations included the original Development Documents (EPA–440/1–74–026a, May 1974; EPA–440/1–74–025a, May 1974; and EPA–440/1–76/047–b, December 1976) and their appendices. These records were very useful in obtaining general information on the pulp, paper, and paperboard industry. They were reviewed for information on the use of chemical additives, the use or suspected presence of toxic and nonconventional pollutants, applicable production process controls, and available effluent treatment techniques. The administrative record also included economic information contained in the original economic impact analysis documents (EPA–230/1–73–023, September 1973, and EPA–230/2–76–045, January 1976).

A. *Data-Gathering—Specifics of Technical Study.* An industry survey program was developed to collect technical information on the manufacture of pulp, paper, and paperboard. This information was collected under authority of section 308 of the Act. With considerable input from and review by industry representatives, two questionnaires were developed for (1) integrated and secondary fiber facilities, and (2) nonintegrated facilities. Through the survey program, the agency sought information on age and size of facilities, raw material usage, production processes employed, wastewater characteristics, and methods of wastewater control and treatment. It was felt by industry representatives that, to ensure a sound data base for establishment of regulatons, it was necessary to survey the entire industry. Therefore, questionnaires were sent to representatives of all known operating mills. Of the 678 known operating mills to be sent the questionnaires, 632 responses (over 93 percent) were received. It has since been determined that there are about 706 operating mills; some of the mills not included in the technical survey are old mills that are now operating but were shut down at the time of the survey or are new mills that have begun operation after submittal of the questionnaires in the fall of 1977.

The technical contractor contacted representatives of State regulatory agencies, EPA regional offices, and EPA and private research facilities for available pertinent data and for information on unpublished research activities.

An extensive literature review was performed with the purpose of: 1) obtaining pertinent general information

on the pulp, paper, and paperboard industry, 2) preparing a background information file on the presence of the 129 toxic pollutants that may be discharged from pulp, paper, and paperboard mills, 3) obtaining information on the presence of other pollutants (nonconventional pollutants) that may be discharged from pulp, paper, and paperboard mills, and 4) obtaining information on production process controls and effluent treatment technology employed in the industry for control of toxic, conventional, and nonconventional pollutants. Four automated literature document searches were employed in addition to reviewing the publications of the Pulp and Paper Research Institute of Canada and of EPA's Office of Research and Development. Through these sources, over one million articles/papers and 3,500 environmental data files were searched. Those which appeared relevant were obtained, reviewed, and, if appropriate, incorporated into the data base. After completing the literature review, 14 additional nonconventional polutants (xylene, 4 resin acids, 3 fatty acids, and 6 bleach plant derivatives) were added to the list of 129 specific toxic pollutants to be investigated during the sampling and analytical program.

B. *Data-Gathering—Specifics of Economic Study.* Data for the economic analysis of the industry were obtained from a financial survey program under the authority of section 308 of the Clean Water Act. Questionnaires seeking mill capacity, production volume, production costs, balance sheet and income information, costs for existing treatment facilitites, and projected capital expenditures were sent to representatives of 706 mills. Of these, responses to the initial request for information were received for 546 mills. Responses indicated that 48 of these mills were either closed or that pulp, paper, or paperboard products were no longer manufactured. Thus, a total of 594 responses were received in the initial mailing. A follow-up letter was sent to representatives of the 112 non-responding mills that yielded 88 additional responses; therefore, responses were received for a total of 682 mills, a 97 percent response rate. The financial survey data was supplemented by data from government publications, industry members, trade associations, publicly-available financial studies, and visits to mills.

Because of the desire of several mill owners to safeguard the confidential financial information requested in the financial survey by means beyond those provided by EPA, an agreement was reached between the mill owners and EPA allowing mill owners the choice to send their financial survey responses to an impartial third party or directly to EPA. This agreement, known as the Third Party Data Aggregation Procedure Agreement, was implemented to allow the mill owners to have added protection of their confidential information above that provided by EPA, if they so desired, while still allowing the Agency to perform an analysis using actual mill data. The financial data received on all survey responses was stored as one computer data base held by the third party.

As part of this procedure EPA agreed to include several limitations on uses of the data base in conducting our study of the pulp, paper, and paperboard industry. Among them were limitations on the Agency's access to the data base and on the output of computer programs performed using the data base. The Agency could not remove data on individual mills from the premises of the third party nor could the name and location of a mill be seen with its financial information. The only outputs which could be seen were those generated using data from two or more mills. Because of these limitations on access to and uses of the data base, the Agency was constrained from performing some detailed analyses. However, these were not in any area of major concern and the quality of the analysis performed is quite high when compared to analyses performed without data collected in financial surveys. The results of the analysis are presented in Section XVI of this notice.

V. Sampling and Analytical Program

As Congress recognized in enacting the Clean Water Act of 1977, the state-of-the-art ability to monitor and detect toxic pollutants is limited. In the field of wastewater treatment, little attention was paid to the control of specific organic compounds until a few years ago. Only on rare occasions has EPA regulated, or has industry monitored or even developed methods to monitor for these pollutants. As a result, analytical methods for many of the toxic pollutants have not yet been promulgated under section 304(h) of the Act. Moreover, state-of-the-art techniques involve the use of expensive, sophisticated equipment, with costs ranging as high as $200,000 per unit.

When faced with these problems, EPA scientists, including staff of the Environmental Research Laboratory in Athens, Georgia and staff of the Environmental Monitoring and Support Laboratory in Cincinnati, Ohio, conducted a literature search and initiated a laboratory program to develop analytical and sampling protocols. The result was the establishment of a comprehensive set of procedures entitled, *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants,* (EPA, Cincinnati, Ohio, April 1977).

Because section 304(h) methods were available for most toxic metals, pesticides, total cyanide, and total phenolics, the analytical effort focused on developing methods for sampling and analyzing specific organic toxic pollutants. The three basic analytical approaches considered were infrared spectroscopy, gas chromatography (GC) with multiple detectors, and gas chromatography/mass spectrometry (GC/MS). In selecting among these alternatives, EPA considered sensitivity, laboratory availability, costs, applicability to diverse waste streams from numerous industries, and capability for implementation within the statutory and court-ordered time constraints of EPA's program.

The Agency concluded that infrared spectroscopy was not sufficiently sensitive or specific for application in wastewater analyses, and that GC with multiple detectors without mass spectrometry would require multiple runs incompatible with time constraints and would possibly result in failure to detect certain toxic pollutants. EPA chose GC/MS because it could identify a wide variety of pollutants in many different matrices and do so in the presence of interfering compounds and within the time constraints of the program. In EPA's judgment, GC/MS and the other analytical methods for toxics used in this rulemaking represent the best state-of-the-art methods for toxic pollutant analyses available at the time of this study.

As the state-of-the-art matures, EPA intends to refine the sampling and analytical protocols to keep pace with technological advancements. However, limited resources prevent EPA from reworking completed sampling and analyses to keep up with the evolution of analytical methods. As a result, the analytical techniques used in some rulemakings may differ slightly from those used in others. In each case, however, the analytical methods used represent the best state-of-the-art available for a given industry study. One of the goals of EPA's analytical program is the proposal and promulgation of additional section 304(h) analytical methods for toxic pollutants, scheduled for calendar years

1979 and 1980. On December 3, 1979, EPA proposed rules establishing test procedures for the analysis of 113 organic toxic pollutants (44 FR 69464; 40 CFR 136).

Before proceeding to analyze industrial wastewaters, EPA concluded that it had to define specific toxic pollutants for analyses. The list of 65 toxic pollutants and classes of toxic pollutants potentially includes thousands of specific pollutants; the expenditure of resources in government and private laboratories would be overwhelming if analyses were attempted for all of these pollutants. Therefore, in order to make the task more manageable, EPA selected 129 specific toxic pollutants for study in this rulemaking and other industry rulemakings. The criteria for selection of these 129 pollutants included frequency of occurrence in water, chemical stability and structure, amount of the chemical produced, availability of chemical standards for measurement, and other factors. In addition to the 129 specific toxic pollutants, EPA decided to investigate the presence of an additional 14 nonconventional organic pollutants known to be present in pulp, paper, and paperboard effluents.

EPA ascertained the presence and magnitude of the 129 specific toxic and the additional 14 nonconventional pollutants in pulp, paper, and paperboard wastewaters in a two-phase sampling and analysis program: screening and verification. The purpose of the screening program was the identification of those of the 129 specific toxic and the 14 nonconventional pollutants that are present in pulp, paper, and paperboard effluents. The procedures used to analyze wastewater samples during screening, described in *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants* (EPA, Cincinnati, Ohio, April, 1977) and *Procedures for Screening of Pulp, Paper, and Paperboard Effluents for Fourteen Nonconventional Pollutants* (EPA, Washington, D.C., December, 1980), also allow for calculation of the approximate quantity of those specific toxic and additional 14 nonconventional pollutants present. The purpose of the verification program was to verify the presence of the toxic and additional nonconventional pollutants identified during screening and to determine the quantity of specific toxic and nonconventional pollutants present in pulp, paper, and paperboard wastewaters prior to treatment and after the application of various control and treatment technologies employed in the industry.

Ideally, the Agency would complete all aspects of the screening program prior to commencement of the verification program. However, a complication arose in the process of completing these investigations that forced the Agency to depart from this preferred approach.

In the screening phase, 15 mill groupings were established that were representative of the pulp, paper, and paperboard industry. One mill from each of 11 of the 15 groups was selected for sampling. A selection was not initially possible for the remaining four groups because insufficient information was available to allow such a selection. Mill sampling proceeded and each of the 11 selected mills were sampled by an Agency contractor. After completion of the 11 sampling visits, funding for the project was depleted due to delays in receipt of supplemental appropriations from Congress. Monies allocated for completion of the technical study became available only after a delay of seven months. Keeping in mind the court-imposed deadlines, the Agency determined that any further delay in initiation of the verification sampling program was intolerable. During the period of delay, a methodology was developed that would allow initiation of the verification program immediately upon availability of funding and would also provide for development of the same high quality of data that would be obtained if the screening program had been completed.

Specific toxic pollutants to be analyzed during the verification program were selected on the basis of the best information available to the Agency. This necessitated a heavy reliance on analytical data gathered during the abbreviated screening program. All specific toxic pollutants identified as present in discharges from the 11 sampled mills were analyzed during verification sampling. In addition, it was decided that both screening and verification studies would be conducted simultaneously at all verification mills where processes were employed that were representative of the four mill groupings not previously a part of the screening program.

EPA Regional field teams had conducted and were continuing to conduct sampling studies at 47 pulp, paper, and paperboard mills. Sample collection and analysis adhered to the procedures specified in *Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants* (EPA, Cincinnati, Ohio, April, 1977); therefore, the results of these EPA Regional investigations are equivalent to the screening data obtained during contractor screening studies at the 11 mills. Unfortunately, at the time of commencement of the verification program, no complete data were available for any of the total of 47 sampling visits conducted by EPA Regional sampling teams. Therefore, the Agency decided to continue to use GC/MS procedures during the verification program because this would allow storage of all verification data on computer tapes.

Analysis of verification parameters began as soon as samples were collected and shipped to the analytical laboratory. Computer tapes including data on all specific toxic pollutants were prepared. This enabled a review of the data tapes upon the determination that other specific toxic pollutants were present in pulp, paper, and paperboard effluents that were not identified at the 11 screening mills. This storage of data ensured that the verification program would yield comparable results to that which would have been obtained had screening results been available from mills representative of all 15 mill groupings.

The Agency later determined that further analysis of the data tapes would be unnecessary after completion of a thorough review of screening data. These data were gathered during screening studies conducted by EPA Regional field teams and during contractor verification sampling at those 17 mills where processes were employed that were characteristic of the four mill groupings that were not a part of the initial contractor screening program. All additional compounds that were identified and were not analyzed during verification sampling were present in amounts too small to be effectively reduced by technologies known to the Administrator.

The procedures used to analyze samples collected during verification sampling provided for additional quality control and quality assurance over those procedures used during the screening phase. These verification procedures are the same as Methods 624 and 625 proposed under authority of sections 304(h) and 501(a) of the Act (see 40 CFR Part 136; 44 FR 69464 (December 3, 1979)). The Agency chose the option of including additional quality control and quality assurance procedures described in *Procedures for Analysis of Pulp, Paper, and Paperboard Effluents for Toxic and Nonconventional Pollutants* (EPA, Washington, D.C., December, 1980). These quality control and quality assurance procedures allow for

interpretation of data to account for the percent recovery of specific toxic and nonconventional pollutants and for a determination of whether the analytical results are valid. This is accomplished through the addition of external standards characteristic of groups of the specific toxic and nonconventional pollutants under investigation: phenolics, phthalates, polynuclear aromatic hydrocarbons, and resin and fatty acids. During the verification program 60 facilities were sampled; at least one and as many as six mills were sampled that were characteristic of each of the subcategories of the pulp, paper, and paperboard industry.

The primary objective of the field sampling programs (both screening and verification) was to produce composite samples of wastewater from which determinations could be made of the amount (concentration) of toxic pollutants present. Sampling was conducted during three consecutive days of plant operation. Raw wastewater samples were taken either before treatment or after minimal preliminary treatment (i.e., screening, primary sedimentation), depending upon accessibility to the wastewater stream. Treated effluent samples were taken either following pretreatment (usually indirect dischargers) or after biological and/or physical/chemical treatment (direct dischargers). EPA also sampled the raw water source (e.g., intake water) to determine the presence of toxic pollutants prior to contamination by the manufacturing process.

Prior to both screening and verification plant visits, sample containers were carefully washed and prepared using appropriate procedures specified in *Sampling and Analysis Procedures for Screening of Industrial Pollutants for Priority Pollutants* (EPA, Cincinnati, Ohio, April, 1977). EPA took a number of other precautions to minimize potential contamination from sampler components. Samples were kept on ice prior to and during express shipment in insulated containers. At raw waste or pretreatment and at final effluent sampling points, automatic samplers were used to prepare composite samples from individual aliquots collected at 30-minute intervals.

The analyses for the 129 toxic pollutants were performed according to groups of chemicals and associated analytical schemes. Organic toxic pollutants include 32 volatile (purgeable) and 82 nonvolatile pollutants. The nonvolatile pollutants include 2 base extractables, 45 neutral extractables, 11 acid extractables, and 24 pesticides. Inorganic toxic pollutants include 13 heavy metals, cyanide, and asbestos. One pollutant, 2,3,7,8-tetrachloro-dibenzo-a-dioxin (TCDD), was not analyzed. TCDD was omitted because of its extreme toxicity and the health hazards involved in preparing standard solutions. The 14 additional nonconventional organics include xylene, a volatile organic, and 13 acid-extractable organics (3 fatty acids, 4 resin acids, and 6 bleach plant derivatives).

The primary analytical method used in screening was the identification of volatile organics and base-neutral and acid-extractable organics through the use of gas chromatography (GC) with confirmation and quantification on all samples by mass spectrometry (MS). A similar approach was used during verification except that a single acid-neutral extraction was employed in the analysis of extractable organics. GC was employed for analysis of pesticides with presence confirmed by MS. The Agency analyzed the toxic heavy metals by atomic adsorption spectrophotometry (AAS), with flame or graphite furnace atomization following appropriate digestion of the sample, and by the inductively-coupled argon plasma (ICAP) excitation technique. Total cyanide and total phenols were measured by conventional wet chemistry techniques as outlined in "Standard Methods for the Examination of Water and Wastewater, 14th Edition." Analyses for asbestos were accomplished by microscopy and fiber presence reported as chrysotile fiber count. Analyses for other nonconventional pollutants (color, ammonia, and COD) were accomplished using "Methods for Chemical Analysis of Water and Wastes," (EPA 625/6–74–003) and amendments thereto. A detailed discussion of the analytical procedures employed for all determinations is provided in Appendix A of the Development Document.

During screening, 72-hour composite samples were collected for analysis of specific toxic pollutants (acid and base-neutral extractable organics, pesticides, and metals except mercury), 13 of the 14 additional nonconventional organic pollutants, and asbestos. Grab samples were taken for volatile (purgeable) priority organics, xylene, total phenolics, total cyanide, and mercury.

During the verification program, 24-hour composite samples were collected for three consecutive days for analysis of specific toxic pollutants (acid-neutral extractable organics, pesticides, and metals except mercury), 13 of the 14 additional nonconventional pollutants under investigation, COD, color, and ammonia. Grab samples were taken for volatile (purgeable) priority organics, xylene, mercury, and total cyanide.

VI. Industry Subcategorization

In developing these regulations, it was necessary to determine whether different effluent limitations and standards of performance were appropriate for different groups of mills (subcategories) within the industry. The factors considered in identifying these subcategories included: raw materials used, products manufactured, production processes employed, mill size and age, and treatment costs. The original (Phase I and Phase II) rulemaking efforts resulted in a total of 22 different subcategories.

As part of the BAT review program, an updated and more complete data base has been collected for 632 operating mills in the pulp, paper, and paperboard industry. A review of the existing subcategorization scheme was undertaken in order to determine its adequacy in representing current industry practices.

In the integrated mills segment of the industry, this review has resulted in a number of revisions. A single semi-chemical subcategory has been established that includes all mills where paperboard is made from semi-chemical pulp produced on-site. Mills previously within the sodium-based neutral sulfite semi-chemical (NSSC) and the ammonia-based NSSC subcategories are now included in the semi-chemical subcategory. Another new subcategory, unbleached kraft and semi-chemical, has been established that includes all mills where pulp is produced without bleaching using two pulping processes, unbleached kraft and semi-chemical, wherein the spent semi-chemical cooking liquor is burned within the kraft chemical recovery system. Mills previously within the unbleached kraft-neutral sulfite semi-chemical (cross recovery) subcategory are included in the unbleached kraft and semi-chemical subcategory.

In the secondary fiber segment, a new subcategory, the wastepaper-molded products subcategory, has been established to reflect distinct process and wastewater differences associated with the production of molded products from wastepaper.

In the nonintegrated segment of the industry, three new subcategories have been established to represent differences in the manufacture of specific products. The new subcategories are nonintegrated-lightweight, nonintegrated-filter and nonwoven, and nonintegrated-paperboard.

Detailed information on the basis for these revisions is presented in Section IV of the Development Document. The subcategories of the pulp, paper, and paperboard industry for which regulations are proposed in this rulemaking are defined as follows:

Dissolving Kraft. This subcategory includes mills where a highly bleached pulp is produced using a "full cook" process employing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. Included in the manufacturing process is a "pre-cook" operation termed pre-hydrolysis. The principal product is a highly bleached and purified dissolving pulp used principally for the manufacture of rayon and other products requiring the virtual absence of lignin and a very high alpha cellulose content.

Market Bleached Kraft. This subcategory includes mills where a bleached pulp is produced using a "full cook" process employing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. Papergrade market pulp is produced at mills representative of this subcategory.

Board, Coarse, and Tissue (BCT) Bleached Kraft. This subcategory includes the integrated production of bleached kraft pulp and board, coarse, and tissue papers. Bleached kraft pulp is produced on-site using a "full cook" process employing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. The principal products include paperboard (B), coarse papers (C), tissue papers (T), and market pulp.

Fine Bleached Kraft. This subcategory includes the integrated production of bleached kraft pulp and fine papers. Bleached kraft pulp is produced on-site using a "full cook" process employing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. The principal products are fine papers, which include business, writing, and printing papers, and market pulp.

Soda. This subcategory includes the integrated production of bleached soda pulp and fine papers. The bleached soda pulp is produced on-site using a "full cook" process employing a highly alkaline sodium hydroxide cooking liquor. The principal products are fine papers, which include printing, writing, and business papers, and market pulp.

Unbleached Kraft. This subcategory includes mills where pulp is produced without bleaching using a "full cook" process employing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. The pulp is used on-site to produce linerboard, the smooth facing in corrugated boxes, and bag papers.

Semi-Chemical. This subcategory includes mills where pulp is produced using a process that involves the cooking of wood chips under pressure using a variety of cooking liquors including neutral sulfite and combinations of soda ash and caustic soda. The cooked chips are usually refined before beging converted on-site into board or similar products. The principal products include corrugating medium, insulating board, partition board, chip board, tube stock, and specialty boards.

Unbleached Kraft and Semi-Chemical. This subcategory includes mills where pulp is produced without bleaching using two pulping processes: unbleached kraft and semi-chemical. Spent semi-chemical cooking liquor is burned within the kraft chemical recovery system. The pulps are used on-site to produce both linerboard and corrugating medium used in the production of corrugated boxes.

Dissolving Sulfite Pulp. This subcategory includes mills where a highly bleached and purified pulp is produced using a "full cook" process employing strong solutions of sulfites of calcium, magnesium, ammonia, or sodium. The pulps produced by this process are viscose, nitration, cellophane, or acetate grades and are used principally for the manufacture of rayon and other products that require the virtual absence of lignin.

Papergrade Sulfite (Blow Pit Wash). This subcategory includes integrated production of sulfite pulp and paper. The sulfite pulp is produced on-site using a "full cook" process employing an acidic cooking liquor of sulfites of calcium, magnesium, ammonia, or sodium. Following the cooking operations, the spent cooking liquor is washed from the pulp in blow pits. The principal products include tissue papers, newsprint, fine papers, and market pulp.

Papergrade Sulfite (Drum Wash). This subcategory includes the integrated production of sulfite pulp and paper. The sulfite pulp is produced on-site employing a "full cook" process using an acidic cooking liquor of sulfites of calcium, magnesium, ammonia, or sodium. Following the cooking operations, the spent cooking liquor is washed from the pulp on vacuum or pressure drums. Also included are mills using belt extraction systems for pulp washing. Principal products made include tissue papers, fine papers, newsprint, and market pulp.

Groundwood—Thermo-Mechanical. This subcategory includes the production of thermo-mechanical groundwood pulp and paper. The thermo-mechanical groundwood pulp is produced on-site using a "brief cook" process employing steam (with or without the addition of cooking chemicals such as sodium sulfite) followed by mechanical defibration in refiners, resulting in yields of approximately 95% or greater. The pulp may be brightened using hydrosulfite or peroxide bleaching chemicals. The principal products include market pulp, fine papers, newsprint, and tissue papers.

Groundwood-Coarse, Molded, News (CMN) Papers. This subcategory includes the integrated production of groundwood pulp and paper. The groundwood pulp is produced, with or without brightening, utilizing only mechanical defibration using either stone grinders or refiners. The principal products made by this process include coarse papers (C), molded fiber products (M), and Newsprint (N).

Groundwood-Fine Papers. This subcategory includes the integrated production of groundwood pulp and paper. The groundwood pulp is produced, with or without brightening, utilizing only mechanical defibration by either stone grinders or refiners. The principal products made by this process are fine papers which include business, writing, and printing papers.

Deink. This subcategory includes the integrated production of deinked pulp and paper from wastepapers using an alkaline process to remove contaminants such as ink and coating pigments. The deinked pulp is usually brightened or bleached. Principal products include printing, writing and business papers, tissue papers, and newsprint.

Tissue From Wastepaper. This subcategory includes the production of tissue papers from wastepapers without deinking. The principal products made include facial and toilet papers, glassine, paper diapers, and paper towels.

Paperboard from Wastepaper. This subcategory includes mills where paperboard products are manufactured from a wide variety of wastepapers such as corrugated boxes, box board, and newspapers; no bleaching is done on-site. Mills where paperboard products are manufactured principally or exclusively from virgin fiber are not included within this subcategory, which includes only those mills where wastepaper comprises at least 80 percent of the raw material fibers. The principal products include a wide variety of items used in commercial packaging, such as bottle cartons.

Wastepaper-Molded Products. This subcategory includes mills where molded products are produced from wastepapers without deinking. Products include molded items such as fruit and

vegetable packs and similar throwaway containers and display items.

Builders' Paper and Roofing Felt. This subcategory includes mills where heavy papers used in the construction industry are produced from cellulosic fibers derived from wastepaper, wood flour and sawdust, wood chips, and rags. Neither bleaching nor chemical pulping processes are employed on-site.

Nonintegrated-Fine Papers. This subcategory includes nonintegrated mills where fine papers are produced from purchased pulp. The principal products of this process are printing, writing, business, and technical papers.

Nonintegrated-Tissue Papers. This subcategory includes nonintegrated mills where tissue papers are produced from wood pulp or deinked pulp prepared at another site. The principal products made at these mills include facial and toilet papers, glassine, paper diapers, and paper towels.

Nonintegrated-Lightweight Papers. This subcategory includes nonintegrated mills where lightweight or thin papers are produced from wood pulp or secondary fibers prepared at another site and from nonwood fibers and additives. The principal products made at these mills include uncoated thin papers, such as carbonizing papers and cigarette papers, and some special grades of tissue such as capacitor, pattern, and interleaf.

Nonintergrated-Filter and Nonwoven Papers. This subcategory includes nonintegrated mills where filter papers and nonwoven items are produced from a furnish of wood pulp, secondary fibers, and nonwood fibers prepared at another site. The principal products made at these mills include filter and blotting papers, nonwoven packaging and specialties, insultation, technical papers, and gaskets.

Nonintegrated-Paperboard. This subcategory includes nonintegrated mills where paperboard is produced from wood pulp or secondary fibers prepared at another site. The principal products made at these mills include linerboard, folding boxboard, milk cartons, food board, chip board, pressboard, and other specialty boards. Mills where electrical grades of board and matrix board are produced are not included in this subcategory.

The subcategories described above do not reflect the industry segments used to evaluate the economic impacts of the proposed regulations. As can be determined from the descriptions above, at mills in certain subcategories a variety of end products can be manufactured. Also, each end product can be made at mills in various subcategories. For example, tissue papers are made at mills in the BCT bleached kraft, both papergrade sulfite, deink, tissue from wastepaper, and nonintegrated-tissue subcategories. At mills in some of these subcategories, several other products can also be made. The economic impacts are presented from both the mill types and the product types which are described below (see Section XVI, COSTS, EFFLUENT REDUCTION BENEFITS, AND ECONOMIC IMPACTS).

VII. Available Wastewater Control and Treatment Technology

A. *Status of In-Place Technology.* The control and treatment technologies that are employed to reduce pollutant discharge from pulp, paper, and paperboard manufacturing facilities include a broad range of in-plant and process changes and end-of-pipe treatment techniques. The in-plant control measures range from the application of minor water conservation measures, such as liquid level control, to extensive recycling of wastewater. The end-of-pipe treatment technologies range from no treatment to complete containment of wastewater. At most mills, programs have been implemented that combine elements of both in-plant control and wastewater treatment.

In-plant control measures employed at mills in the pulp, paper, and paperboard industry include water reduction and reuse techniques, chemical substitution, and process changes. Techniques to reduce water use include the use of high pressure showers for wire and felt cleaning on the paper machine and the elimination of water use where applicable (i.e., for housekeeping, for barking of whole logs).

Extensive reuse of water is practiced in the pulp, paper, and paperboard industry. A recent study prepared by the EPA Office of Research and Development indicates that all intake water is used almost three and one-half times before it is discharged. Recirculation techniques include reuse of paper machine whitewater as pump seal water, as pulp dilution water, and on paper machine showers and the use of jump-stage or countercurrent washing of pulp.

Chemical subtitution involves the replacement of process chemicals having high pollutant strength or toxic properties with others that are less polluting or more amenable to treatment. Historically, mercury compounds were contained in biocide and slimicide formulations used in the pulp, paper, and paperboard industry. Process chemicals containing mercury are no longer used in this industry. Similarly, biocide and slimicide formulations containing chlorophenolics have been replaced with formulations that do not contain these toxic pollutants. Zinc hydrosulfite was commonly used in the bleaching of groundwood pulps; this bleaching chemical has been replaced through the use of sodium hydrosulfite, thus minimizing zinc discharge from the pulp, paper, and paperboard industry.

Process changes include various measures that reduce water use, wastewater discharge, and/or wastewater loadings while improving processing efficiency. Replacement of barometric condensers with surface condensers, evaporation of process streams for by-product recovery, the addition of spill control systems to enable reprocessing of chemical cooking liquors, and addition or enlargement of existing pulp washers are examples of process changes that have been successfully employed in the pulp, paper, and paperboard industry to reduce pollutant loadings while improving process efficiencies.

The end-of-pipe treatment technologies employed by the industry include: no treatment, preliminary treatment (neutralization, equalization, primary clarification, and/or various flotation techniques), biological or equivalent treatment (aerated stabilization basins with and without settling basins, oxidation ponds, and activated sludge systems), and physical/chemical treatment (filtration and chemically-assisted clarification).

At approximately five percent of the direct discharging mills, no treatment is provided. At another 20 percent, only preliminary treatment is provided. It is anticipated that some of these mills will be connected to POTWs currently in the construction or design stages. At the remaining 75 percent of the direct discharging mills, biological or equivalent treatment is provided, with aerated stabilization basins the predominant type of treatment system employed. Biologically-treated effluents are further treated at three mills using chemically-assisted clarification.

At approximately 84 percent of the indirect discharging mills surveyed, no treatment is provided. To date, discharge from these facilities to POTWs has been allowed with no specific control requirements. It is anticipated that this may change as industrial waste contributions to POTWs are evaluated and user charges assessed in accordance with EPA guidelines. At the remaining indirect discharging mills, only preliminary treatment, usually primary clarification or dissolved air flotation, is employed.

There are 51 pulp, paper, and paperboard mills from which no wastewater is discharged to navigable waters. Ninety percent of these mills are secondary fiber mills; at over 70 percent, wastepaper board or builders' paper and roofing felt are produced.

B. *Control Technologies Considered.* An extensive review of the control and treatment alternatives available for application in the pulp, paper, and paperboard industry has resulted in identification of various methods for control of toxic, conventional, and nonconventional pollutants. In general, toxic pollutnats are effectively controlled through the application of the best practicable control technology currently available. However, it has been determined that pentachlorophenol and trichlorophenol, constituents of biocides and slimicides used in this industry, are not effectively treated and pass through existing treatment systems. These pollutants and the toxic metal zinc, once commonly used in the bleaching of mechanical pulps, can be controlled through the substitution of process chemicals. This process control technology forms the basis of technology options considered in establishing BAT, NSPS, PSES, and PSNS.

Technologies identified for control of conventional pollutants include: (1) BPT technology plus the implementation of additional production process controls to reduce raw waste loads, ensuring additional removal of BOD and TSS; (2) BPT technology plus the addition of chemically-assisted clarification for those subcategories where BPT was based on biological treatment, or BPT technology plus the addition of biological treatment for those subcategories where BPT was based on primary treatment only; (3) Option 1 plus the addition of chemically-assisted clarification for those subcategories where BPT was based on biological treatment, or Option 1 plus the addition of biological treatment for those subcategories where BPT was based on primary treatment only; and (4) upgrade of existing BPT to attain effluent levels characteristic of best performing mills. These technology options were considered in establishing BCT effluent limitations. It was determined that NSPS for conventional pollutants would be based on the application of production process controls to reduce wastewater discharge and raw waste loadings and end-of-pipe treatment in the form of biological treatment for all subcategories except nonintegrated-tissue papers, nonintegrated-filter and nonwoven papers, nonintegrated-lightweight papers, and nonintegrated-paperboard, where end-of-pipe treatment is in the form of primary clarification.

Several technologies were identified for control of nonconventional pollutants in pulp, paper, and paperboard wastewaters, including (1) control of ammonia discharges at mills where ammonia is used as a chemical cooking base through (a) substitution to a different base chemical or (b) through the application of biological treatment in a mode to allow conversion of ammonia to nitrate, and (2) control of color in those subcategories where highly colored effluents are discharged through the application of chemically-assisted clarification. Detailed information on technologies available for control of ammonia and color are contained in Sections VII, VIII, and IX of the Development Document. It has been determined that effluent limitations and standards will not be established for ammonia and color. Color will be controlled on a case-by-case basis as dictated by water quality considerations. The Agency is seeking public comment on ammonia discharges from integrated mills where ammonia-based cooking chemicals are used; limited information is currently available on the discharge of this nonconventional pollutant.

VIII. Best Practicable Control Technology (BPT) Effluent Limitations

Effluent limitations reflecting the best practicable control technology currently available (BPT) are generally based on the average of the best existing performance of plants of various sizes, ages, and unit processes within an industry or subcategory. Where existing performance is uniformly inadequate, BPT may be treansferred from a different subcategory or category. Limitations based on transfer technology must be supported by a conclusion that the technology is, indeed, transferable and a reasonable prediction that it will be capable of achieving the prescribed effluent limits (see *Tanners' Council of America* v. *Train,* 540 F. 2d 1188 (4th Cir. 1976)). BPT focuses on end-of-pipe treatment rather than process changes or internal controls, except where such changes or controls are common industry practice.

BPT considers the total cost of the application of technololgy in relation to the effluent reduction benefits to be achieved from the technologies. The cost/benefit inquiry for BPT is a limited balancing, which does not require the Agency to quantify benefits in monetary terms (see, e.g., *American Iron and Steel Institute* v. *EPA,* 526 F. 2d 1027 (3rd Cir. 1975)). In balancing costs in relation to effluent reduction benefits, EPA considers the volume and nature of existing discharges, the volume and nature of discharges expected after application of BPT, the general environmental effects of the pollutants, and the costs and economic impacts of the required pollution control level. The Act does not require or permit consideration of water quality problems attributable to particular point sources or industries, or water quality improvements in particular water bodies (see *Weyerhaeuser Company* v. *Costle,* 11 ERC 2149 (D.C. Cir. 1978)).

The Clean Water Act requires the establishment of BCT limitations for industry subcategories that discharge conventional pollutants. In order to develop BCT limitations for four new subcategories of the pulp, paper, and paperboard industry (wastepaper-molded products, nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard), a base level BPT determination is desirable because the "cost-reasonableness test", required as part of the BCT determination, rest on the incremental cost of removal of BOD5 and TSS form BPT to BCT.

As stated above, the Aot establishes the requirements for development of BPT limitations, which are basically the average of the best existing performance. The best practicable control technology currently available for the wastepaper-molded products subcategory has been identified as biological treatment, which is also the technology on which BPT limitations are based for all other subcategories of the secondary fibers segment of the pulp, paper, and paperboard industry.

It has been determined that wastewater discharges from the nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard subcategories are similar in nature to discharges from the nonintegrated-tissue papers subcategory. For these subcategories, the best practicable control technology currently available has been identified as primary clarification, which is the technology on which BPT limitations are based for the nonintegrated-tissue papers subcategory.

The economic analysis indicates that implementation of BPT would require four direct discharging mills in the wastepaper-molded products subcategory to invest a total of $6.17 million and incur annual costs (including operation, maintenance, interest, and depreciation) of $1.85 million. The remainder of the direct discharging mills in the wastepaper-molded products,

nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard subcategories already have treatment in-place that is at least equivalent to that which forms the basis of BPT effluent limitations. The only product sector affected by these regulations will be the molded pulp product sector. Production costs are expected to increase by about 6.9 percent. No supply and demand analysis can be done for this product sector, but any price increases will be limited to the cost increase. If only half of the cost increase is passed through to users of molded pulp products, there will be no closures as a result of implementation of these proposed rules.

IX. Best Available Technology (BAT) Effluent Limitations

The factors considered in establishing the best available technology economically achievable (BAT) level of control include environmental considerations such as air pollution, energy consumption, and solid waste generation, the costs of applying the control technology, the age of process equipment and facilities, the process employed, process changes, and the engineering aspects of applying various types of control techniques (Section 304(b)(2)(B)). In general, the BAT technology level represents, at a minimum, the best existing economically-achievable performance of plants of shared characteristics. Where existing performance is uniformly inadequate, BAT technology may be transferred from a different subcategory or industrial category. BAT may include process changes or internal controls, even when not common industry practice.

The statutory assessment of BAT considers costs, but does not require a balancing of costs against effluent reduction benefits (see *Weyerhaeuser* v. *Costle*, 11 ERC 2149 (D.C. Cir. 1978)). In assessing the proposed BAT, the Agency has given substantial weight to the reasonableness of costs. The Agency has considered the volume and nature of discharges, the volume and nature of discharges expected after application of BAT, the general environmental effects of the pollutants, and the costs and economic impacts of the required pollution control levels.

Despite this consideration of costs, the primary determinant of BAT is effluent reduction capability using economically-achievable technology. As a result of the Clean Water Act of 1977, the achievement of BAT has become the national means of controlling the discharge of toxic pollutants. Four different toxic pollutants of concern are discharged from mills in the pulp, paper, and paperboard industry. These pollutants are chloroform, trichlorophenol, pentachlorophenol, and zinc. EPA has selected two available BAT technology options for consideration that will significantly reduce their discharge. Explanation and analysis of these options follow. For a more detailed discussion, see Sections VIII and X of the Development Document.

OPTION 1—Base effluent limitations on the proper application and operation of the technologies that formed the basis of BPT effluent limitations. The technologies on which existing BPT regulations are based include: screening, primary clarification, and biological treatment for all subcategories except nonintegrated-tissue, nonintegrated-lightweight, nonintegrated-filter and nonwoven, and nonintegrated-paperboard, where regulations are based or assumed to be based on screening and primary clarification. Effluent limitations were also established to control the discharge of zinc from the groundwood-fine, groundwood-CMN, and groundwood-thermo-mechanical subcategories. Zinc was regulated under BPT on the basis of precipitation using lime. EPA has determined that the technology actually employed at mills in these subcategories to comply with BPT effluent limitations was the substitution of sodium hydrosulfite, a bleaching chemical, for zinc hydrosulfite.

Regulated pollutants (chloroform and zinc) would be discharged at levels found in mill effluents where BPT limitations are attained. There would be no incremental cost associated with this option.

(B) OPTION 2—Base effluent limitations for control of toxic pollutants on chemical substitution. Slimicides and biocides containing trichlorophenol and pentachlorophenol can be replaced with formulations that do not contain these toxic pollutants.

Pentachlorophenol and trichlorophenol would be reduced to trace amounts. There would be negligible incremental cost associated with this option.

(C) BAT SELECTION AND DECISION CRITERIA—EPA has selected both Options 1 and 2 as the bases for proposed BAT effluent limitations. Option 1 has been selected to ensure control of the discharge of chloroform and zinc from the pulp, paper, and paperboard industry. In those nine subcategories where pulp is bleached with chlorine or chlorine-containing compounds, the resulting high levels of chloroform were found to be substantially reduced through the application of biological treatment. Existing BPT effluent limitations for zinc, which have been incorporated in the BAT regulations, ensure that only low levels of this toxic metal will be discharged from the pulp, paper, and paperboard industry.

Option 2, chemical substitution, was selected for control of trichlorphenol and pentachlorophenol, as it assures control of these toxic pollutants to trace levels without expensive end-of-pipe treatment. EPA has determined, after analysis of data obtained as a result of the verification program, that these pollutants are not effectively removed through the application of primary or biological treatment, the technology bases of BPT effluent limitations for all subcategories. EPA projects that alternative chemicals are currently being used at approximately 80 percent of the mills in the pulp, paper, and paperboard industry, supporting the Agency's decision to select this option.

X. Best Conventional Technology (BCT) Effluent Limitations

The 1977 amendments added section 301(b)(2)(E) to the Act, establishing "best conventional pollutant control technology" (BCT) for discharges of conventional pollutants from existing industrial point sources. Conventional pollutants are those defined in section 304(a)(4)—BOD, TSS, fecal coliform, and pH—and any additional pollutants defined by the Administrator as "conventional" (oil and grease).

BCT is not an additional limitation, but replaces BAT for the control of conventional pollutants. BCT requires that limitations for conventional pollutants be assessed in light of a "cost-reasonableness" test, which involves a comparison of the cost and level of reduction of conventional pollutants from the discharge of publicly owned treatment works (POTWs) to the cost and level of reduction of such pollutants from a class or category of industrial sources. As part of its review of BAT for certain "secondary" industries, the Agency promulgated the methodology for this cost test (see 44 FR 50732 (August 29, 1979)). This methodology compares subcategory removal costs (dollars per pound of pollutant, measuring from BPT to BCT) with costs experienced at POTWs.

EPA applied this methodology to the costs for removal of conventional pollutants beyond BPT levels from pulp, paper, and paperboard effluents.

Four technology options (which are described in greater detail in Section

VIII and XI of the Development Document) were considered, including:

(A) OPTION 1—Base effluent limitations on the technology on which BPT is based for each subcategory plus additional in-plant production process controls. No additional end-of-pipe technology beyond BPT is contemplated in this option. Effluent limitations are proposed for each subcategory of the industry and are based on specific controls that include segregation of non-contact cooling water, use of dry barking operations, collection of spills and leaks for reprocessing, increased efficiency of pulp washing, collection and reuse of paper machine spills, improvement in save-all operation, and effluent recycle/reuse. These controls primarily achieve reductions in water use, wastewater discharge, and BOD*5* raw waste loading. Implementation of process controls will improve performance of existing primary and secondary biological treatment systems due to the reductions of raw waste loadings. Evaluation of Option 1 by the BCT cost-reasonableness test shows that the nonintegrated-paperboard subcategory fails the test. For this subcategory, BCT, for this option, is equal to BPT.

The total mass of pollutants removed through application of this technology option would be 47 million kg/yr (103 million lbs/yr) of BOD*5* and 66 million kg/yr (145 million lbs/yr) of TSS, a 27 percent reduction of BOD*5* and a 24 percent reduction of TSS.

The economic analysis indicates that compliance with this option would require that direct dischargers in all segments of the industry invest a total of $654 million and incur annual costs (including operation, maintenance, interest, and depreciation) of $186 million at the projected 1982 industry capacity. Price effects as a result of these costs are expected to range from a decrease of 0.17 percent of semi-chemical corrugating medium to an increase of 3.7 percent for dissolving pulp. Decreases in prices result from decreasing demand for products and a large amount of excess capacity in the product sectors. Price decreases cause a rise in demand, which enables producers to utilize some of their excess capacity. The effects of these costs on the contribution to capital (profitability) in the affected product sectors range from a decrease of 4.1 percent to an increase of 1.28 percent. In product sectors that lose profitability, four mills in the affected subcategories may close rather than invest in pollution control equipment. However, the Agency also projects that three mills that would otherwise close would remain open due to their improved competitive standing under this regulatory option. A net gain in industry capacity of approximately 0.3 percent over the base case is expected due to this option.

(B) OPTION 2—Base effluent limitations on the addition of chemically-assisted clarification of BPT final effluents for all integrated and secondary fiber subcategories and for the nonintegrated-fine subcategory (for these subcategories BPT is based on biological treatment). It is contemplated that additional solids-contact clarifier(s) will be added using alum as a coagulant and polymer as a flocculant aid. For the remaining nonintegrated subcategories, for which primary treatment was the basis of BPT, effluent limitations are based on the addition of biological treatment. Evaluation of Option 2 by the BCT cost-reasonableness test shows that the paperboard from wastepaper, tissue from wastepaper, wastepaper-molded products, builders' paper and roofing felt, nonintegrated-tissue papers, nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard subcategories fail this test. For those subcategories where Option 2 fails the BCT cost-reasonableness test, the less-stringent Option 1 forms the basis for BCT if it passes the test.

The total mass of pollutants removed through application of this technology option would be 95 million kg/yr (208 million lbs/yr) of BOD*5* and 203 million kg/yr (446 million lbs/yr) of TSS, a 55 percent reduction of BOD*5* and a 73 percent reduction of TSS.

The economic analysis indicates that compliance with this option would require that direct dischargers in all segments of the industry invest a total of $1.56 billion and incur annual costs (including operation, maintenance, interest, and depreciation) of $605 million at the projected 1982 industry capacity. Price effects as a result of these costs are expected to range from a decrease of 0.52 percent for recycled linerboard to an increase of 5.28 percent for dissolving pulp. Price decreases result from decreasing demand for products and a large amount of excess capacity in the product sectors. The price decreases cause a rise in demand, which enables producers to utilize some of their excess capacity. The effects of these costs on the contribution to capital (profitability) in the affected product sectors range from a decrease of 9.57 percent to an increase of 4.30 percent. The losses in profitability in some product sectors may lead five mills in the affected subcategories to close rather than invest in pollution control equipment. However, the Agency also projects that one mill that would otherwise have closed will remain open due to its improved competitive standing under this regulatory option. These closures would represent a net 0.3 percent loss in industry capacity.

(C) OPTIONS 3—Base effluent limitations on BCT Option 1 plus the addition of chemically-assisted clarification for all integrated and secondary fiber subcategories and for the nonintegrated-fine papers subcategory (for these subcategories BPT is based on biological treatment). It is comtemplated that additional solids-contact clarifier(s) will be added using alum as a coagulant and polymer as a flocculant aid. For the remaining nonintegrated subcategories, for which primary treatment was the basis of BPT, effluent limitations are based on the application of Option 1 plus the addition of biological treatment. Evaluation of Option 3 by the BCT cost-reasonableness test shows that the tissue from wastepaper, wastepaper-molded products, builders' paper and roofing felt, nonintegrated-tissue papers, nonintegrated-lightweight, papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard subcategories fail this test. For the subcategories where Option 3 fails the BCT cost-reasonableness test, the less-stringent Options 1 or 2 form the basis for BCT if they pass the test.

The total mass of pollutants removed through application of this technology option would be 108 million kg/yr (238 million lbs/yr) of BOD*5* and 216 million kg/yr (476 million lbs/yr) of TSS, a 64 percent reduction of BOD*5* and a 78 percent reduction of TSS.

The economic analysis indicates that compliance with this option would require that direct dischargers in all segments of the industry invest a total of $2.11 billion and incur annual costs (including operation, maintenance, interest, and depreciation) of $860 million at the projected 1982 industry capacity. Price effects as a result of these costs are expected to range from a decrease of 0.80 percent for recycled linerboard to an increase of 8.96 percent for dissolving pulp. The effects of these costs on the contribution to capital (profitability) at the affected mills range from a decrease of 12.59 percent to an increase of 38.4 percent. The losses in profitability in some product sectors may lead six mills in the affected subcategories to choose to close rather than invest in pollution control equipment. However, the Agency also projects that two mills that would

otherwise have closed will remain open due to their improved competitive standing under this regulatory option. These closures would represent a net 0.5 percent loss in industry capacity.

(D) OPTION 4—Base effluent limitations on the levels attained by best performing mills in the respective subcategories. Best mill performance for a subcategory is generally the average performance at all mills where BPT effluent limitations are attained. The technologies for achieving Option 4 effluent limitations vary depending on the type of treatment systems that are employed at mills in each subcategory. Treatment systems commonly employed at mills in the integrated segment, nonintegrated-fine papers, and deink subcategories in which BPT was based on biological treatment include aerated stabiliazation basins, activated sludge systems, and oxidation ponds.

It is contemplated that aerated stabilization basin treatment systems will be upgraded through the addition of spill prevention and control systems, by increasing aeration capacity, and by providing additional settling cpacity. For the nonintegrated-fine papers subcategory, it is contemplated that equalization will also be provided. Conversion to the extended aeration activated sludge process was considered to be the probable method of upgrading the performance of aerated stabilization basins located in colder climates.

It is contemplated that activated sludge systems will be upgraded through the addition of spill prevention and control systems, by providing equalization, by increasing the capacity of aeration basins and by providing for operation in the contact stabilization mode, and by increasing the size of clarification and sludge-handling equipment.

It is contemplated that oxidation ponds will be upgraded through the addition of rapid sand filtration to remove algae that can contribute to the discharge of large levels of suspended solids.

At mills in the nonintegrated subcategories in which BPT is based or assumed to be based on primary treatment, it is contemplated that existing primary treatment systems will be upgraded by reducing clarifier overflow rates to provide for better settling, by adding chemical coagulants, and by increasing sludge-handling capability.

At best performing mills in the remaining subcategories (paperboard from wastepaper, tissue from wastepaper, wastepaper-molded products, and builders' paper and roofing felt), extensive use is made of production process controls to reduce wastewater discharge. Therefore, Option 4 for these subcategories is based on the application of the same technology as discussed in BCT Option 1: the technology on which BPT is based plus the application of additional production process controls.

Evaluation of Option 4 by the BCT cost-reasonableness test shows that the nonintegrated-tissue, nonintegrated-lightweight, nonintegrated-filter and nonwoven, and nonintegrated-paperboard subcategories fail this test. For those subcategories where Option 4 fails the BCT cost-reasonableness test, the less-stringent Option 1 forms the basis for BCT if it passes the test.

The total mass of pollutants removed by this technology option would be 62 million kg/yr (137 million lbs/yr) of BOD*5* and 117 million kg/yr (258 million lbs/yr) of TSS, a 37 percent reduction of BOD*5* and a 42 percent reduction of TSS.

The economic analysis indicates that compliance with this option would require that direct dischargers in all segments of the industry invest a total of $1.28 billion and incur annual costs (including operation, maintenance, interest, and depreciation) of $398 million at the projected 1982 industry capacity. Price increases as a result of these costs are expected to range from zero percent for uncoated groundwood and construction paper and board to 3.57 percent for bleached kraft foldingboard. The effects of these costs on the contribution to capital (profitability) at the affected mills range from a decrease of 5.86 percent to an increase of 7.68 percent. The Agency projects that nine mills will close as a result of these costs. The Agency also projects that three mills that would close without pollution controls in place will remain open. These mills are now high cost, marginal producers whose competitive standing would be improved as a result of the imposition of controls on some lower cost producers and the resultant price increases. A small net loss in industry capacity from the base case is expected due to this option.

(E) BCT SELECTION AND DECISION CRITERIA—EPA has selected Option 4 as the basis for proposed effluent limitations for all subcategories for which the BCT cost-reasonableness test passes. EPA has determined that costs at POTWs are $1.27 per pound of BOD*5* and TSS removed (1978 dollars); if removal costs for a subcategory are less than that cost, they are considered reasonable (44 FR 50732 (August 29, 1979)). In those subcategories where the cost-reasonableness test fails, the less stringent Option 1 forms the basis of BCT if it passes the cost-reasonableness test. The only exceptions are the dissolving sulfite pulp and the builders' paper and roofing felt subcategories for which BCT is established at the BPT level because of the projected severe economic impact. The removal costs for each subcategory for the selected BCT option are shown in Table 1.

Table 1—*BCT Analysis—Proposed Regulation*

	Subcategory average (dollars per pound)	Selected BCT option
Dissolving Kraft	0.31	4
Market Bleached Kraft	0.48	4
BCT Bleached Kraft	0.44	4
Alkaline-Fine*	[illegible]	4
Unbleached Kraft	0.67	4
Semi-Chemical	1.02	4
Unbleached Kraft and Semi-Chemical	[illegible]	4
Dissolving Sulfite Pulp	(**)	BPT
Papergrade Sulfite	0.42	4
Groundwood-TMP	0.62	4
Groundwood-CMN Papers	0.65	4
Groundwood-Fine Papers	0.75	4
Deink	[illegible]	4
Tissue from Wastepaper	0.47	4
Paperboard from Wastepaper	0.10	4
Wastepaper-Molded Products	0.64	4
Builders' Paper and Roofing Felt	(**)	[illegible]
Nonintegrated-Fine Papers	0.23	4
Nonintegrated-Tissue Papers	0.44	1
Nonintegrated-Lightweight Papers	0.75	1
Nonintegrated-Filter and Nonwoven Papers	0.78	1
Nonintegrated-Paperboard	(***)	BPT

*Includes Fine Bleached Kraft and Soda Subcategories.
**BCT equals BPT due to severe economic impact.
***BCT equals BPT as no regulatory option passes the BCT cost test.

There are several factors that weighed heavily in the Agency's decision to select Option 4 as the primary basis of proposed BCT limitations. This option yields significant removals of BOD*5* and TSS at significantly lower costs to the industry than Options 2 and 3 and has been proven through full-scale operation throughout the entire range of process types found in the pulp, paper, and paperboard industry. Option 4 effluent limitations are being attained at 21, 20, and 29 of the direct discharging mills in the integrated, secondary fiber, and nonintegrated segments, respectively. Reliance on Option 2 would mean that effluent limitations would not be attained at only 5, 15, and 22 mills in the integrated, secondary fiber, and nonintegrated segments, respectively. Option 3 effluent limitations are now being attained at only 3, 6, and 20 mills in the integrated, secondary fiber, and nonintegrated segments, respectively. While chemically-assisted clarification is a proven and available technology, uncertainties exist as to the chemical dosage rate required to effect optimum treatment plant performance. Chemical dosage rate has a direct bearing on costs. Because of the heavy reliance on the determination of BCT based on a

cost-reasonableness test, these uncertainties of dosage rate could have a significant impact on a final determination of BCT. At present, the Agency feels more confident establishing BCT effluent limitations that are currently being attained at a significant number of mills through the application of readily available technology, biological treatment (all subcategories except those where BPT is based or assumed to be based on primary treatment) or primary treatment (nonintegrated-tissue papers, nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard subcategories). The proposed limitations will allow considerable flexibility to the industry in their approach to achieving BCT. Combinations of internal controls, treatment system modifications, and even additional end-of-pipe treatment in the form of chemically-assisted clarification can be employed to attain the proposed limitations in the most cost effective manner.

XI. New Source Performance Standards (NSPS)

The basis for new source performance standards (NSPS) under section 306 of the Act is the best available demonstrated technology. At new plants, the opportunity exists to design the best and most efficient pulp and papermaking processes and wastewater treatment facilities, so Congress directed EPA to consider the best demonstrated process changes, in-plant controls, and end-of-pipe treatment technologies that reduce pollution to the maximum extent feasible. It is encouraged that at new sources, reductions in the use of and/or discharge of both water and toxic pollutants be attained through the application of in-plant control measures, but it is expected that the toxic pollutants present in the discharges from the industry today will also present in the discharges from new sources. To control these and the conventional pollutants, EPA considered two options for selection of NSPS. For detailed discussions of these technology options, see Sections VIII and XII of the Development Document.

(A) OPTION 1—Base effluent limitations for control of toxic and conventional pollutants on the application of production process controls to reduce wastewater discharge and raw waste loadings and end-of-pipe treatment in the form of biological treatment for all subcategories except nonintegrated-tissue papers, nonintegrated-lightweight papers, nonintegrated-filter and nonwoven papers, and nonintegrated-paperboard, where end-or-pipe treatment is in the form of primary clarification. This option includes both production process controls that form the basis of BPT and BCT Option 1 in combination with end-of-pipe treatment with a design basis identical to BCT Option 4.

This option ensures substantial reductions in the discharge of the toxic pollutant chloroform from those subcategories where pulp is bleached with chlorine or chlorine-containing compounds. The conventional pollutants BPD*5* and TSS will be controlled at levels equal to or more stringent than BCT Option 4 for all subcategories. The implementation of this technology option will mean that significant quantities of the toxic pollutants zinc, trichlorophenol, and pentachlorophenol may be discharged from direct discharging new source mills.

Economic analysis indicates that selection of this option would not change the rate of entry into the industry or slow the rate of industry growth.

(B) OPTION 2—Base effluent limitations for control of toxic pollutants on chemical substitution. Sodium hydrosulfite can be substituted for zinc hydrosulfite used in the bleaching of mechanical pulps. This substitution ensures the discharge of low levels of zinc from the pulp, paper, and paperboard industry. Slimicides and biocides containing trichlorophenol and pentachlorophenol can be replaced with formulations that do not contain these toxic compounds. The discharges of pentachlorophenol and trichlorophenol would be reduced to trace amounts.

Economic analysis indicates that selection of this option would not change the rate of entry into the industry or slow the rate of industry growth.

(C) NSPS SELECTION AND DECISION CRITERIA—EPA has selected both Options 1 and 2 as the bases for proposed NSPS. Option 1 has been selected to ensure control of the discharge of BOD*5*,TSS, and chloroform from the pulp, paper, and paperboard industry. In those nine integrated subcategories where pulp is bleached with chlorine or chlorine-containing compounds, the resulting high levels of chloroform will be substantially reduced. Application of this control option will also result in significant reductions in the discharge of BOD*5* and TSS. Option 2 was selected for control of trichlorophenol, pentachlorophenol, and zinc. Application of this technology option ensures that only low levels of zinc and virtually no trichlorophenol or pentachlorophenol will be discharged from new sources in the pulp, paper, and paperboard industry.

XII. Pretreatment Standards for Existing Sources (PSES)

Section 307(b) of the Act requires EPA to promulgate pretreatment standards for existing sources (PSES), which must be achieved within three years of promulgation. PSES are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs. The Clean Water Act of 1977 adds a new dimension by requiring pretreatment for pollutants, such as heavy metals, that pass through POTWs in amounts that would violate direct discharge effluent limitations or limit POTWs' sludge management alternatives, including the beneficial use of sludges on agricultural lands. The legislative history of the 1977 Act indicates that pretreatment standards are to be technology-based, analogous to the best available technology for removal of toxic pollutants. The general pretreatment regulations (40 CFR Part 403), which served as the framework for these proposed pretreatment regulations for the pulp, paper, and paperboard industry, can be found at 43 FR 27736 (June 26, 1978). Based on these requirements, EPA considered one option for selection of PSES. For detailed discussions of this option, see Sections VIII and XIII of the Development Document.

EPA has been conducting an extensive study of POTWs and on the basis of this study has determined that many of the metals present in industrial discharges pass through POTWs and may limit sludge disposal alternatives. One of these metals is zinc, a component of one chemical used in the bleaching of mechanical pulps.

(A) OPTION 1—Base effluent limitations for control of toxic pollutants on chemical substitution. Sodium hydrosulfite can be substituted for zinc hydrosulfite in the bleaching of mechanical pulps. This substitution ensures the discharge of only low levels of zinc to POTWs from indirect discharging pulp, paper, and paperboard mills. Slimicides and biocides containing trichlorophenol and pentachlorophenol can be replaced with formulations that do not contain these toxic compounds. The discharge of pentachlorophenol and trichlorophenol, toxic pollutants likely to pass through POTWs, would be reduced to trace amounts. Chloroform is effectively controlled through the application of biological treatment, the type of treatment most commonly used at POTWs. Therefore, this option does

not include specific control technology for the removal of chloroform.

The total masses of regulated pollutants removed through the application of this PSES technology option are estimated to be:

10,000 kg/yr (22,000 lbs/yr) of trichlorophenol
3,600 kg/yr (8,000 lbs/yr) of pentachlorophenol, and
20,000 kg/yr (44,000 lbs/yr) of zinc.

There would be negligible incremental costs associated with the substitution to formulations not containing pentachlorophenol or trichlorophenol. Chemical substitution to minimize zinc discharges will cost about $23,300 per year at the one indirect discharging mill where zinc hydrosulfite is now being used.

(B) SELECTION OF PRETREATMENT TECHNOLOGY AND DECISION CRITERIA—EPA has selected Option 1 as the basis for proposed PSES. The implementation of Option 1 control technology ensures minimal discharge of the toxic metal zinc, from new source indirect discharging mills, minimizing sludge disposal problems and pass through, and virtually eliminates the discharge of the toxic organics trichlorophenol and pentachlorophenol, pollutants likely to pass through POTWs. The toxic pollutant chloroform has been found to be effectively removed through the application of biological treatment and will be controlled at POTWs.

XIII. Pretreatment Standards for New Sources (PSNS)

Section 307(c) of the Act requires EPA to promulgate pretreatment standards for new sources (PSNS) at the same time that it promulgates NSPS. New indirect dischargers, like new direct dischargers, have the opportunity to incorporate the best available demonstrated technologies including process changes, in-plant control measures, and end-of-pipe treatment, and to use plant site selection to ensure adequate treatment system installation. The pretreatment option considered for new dischargers to POTWs is essentially the same as for PSES, and includes:

OPTION ONE—Base limitations for control of toxic pollutants on chemical substitution. Sodium hydrosulfite can be substituted for zinc hydrosulfite in the bleaching of mechanical pulps. This substitution ensures the discharge of only low levels of zinc to POTWs from new source indirect discharging pulp, paper, and paperboard mills. Slimicides and brocides containing trichlorophenol and pentachlorophenol can be replaced with formulations that do not contain these toxic compounds. The discharge of pentachlorophenol and trichlorophenol, toxic pollutants likely to pass through POTWs, would be reduced to trace amounts. Chloroform is effectively controlled through the application of biological treatment, the type of treatment most commonly used at POTWs. Therefore, this option does not include specific control technology for the removal of chloroform.

Economic analysis indicates that this option would not change the rate of entry into the industry or slow the rate of industry growth.

(B) SELECTION OF PRETREATMENT TECHNOLOGY AND DECISION CRITERIA—EPA has selected Option 1 as the basis for proposed PSNS. The implementation of Option 1 control technology ensures minimal discharge of the toxic metal zinc from new source indirect discharging mills, minimizing sludge disposal problems and pass through of this pollutant. This option also virtually eliminates the discharge, from new source indirect discharging mills, of the toxic organics trichlorophenol and pentachlorophenol, pollutants likely to pass through POTWs. The toxic pollutant chloroform has been found to be effectively removed through the application of biological treatment and will be controlled at POTWs.

XIV. Regulated Pollutants

The basis for selection of pollutants controlled by these regulations is set out in Section VI of the Development Document. Summary information is provided about their general nature, common industrial use, use in the pulp, paper, and paperboard industry, detection frequency and concentration levels. Some of these pollutants are designated toxic under section 307(a) of the Act.

A. BCT—The pollutants controlled by this regulation include the statutory conventional pollutants BOD*5*, TSS, and pH. These pollutants are subject to numerical limitations expressed in kilograms per thousand kilograms (pounds per 1000 pounds) of product, except pH for which an allowable discharge range is established.

B. BAT—The toxic pollutants controlled for direct dischargers by this regulation are trichlorophenol, pentachlorophenol, chloroform, and zinc. These pollutants are subject to numerical limitations expressed in kilograms per thousand kilograms (pounds per 1000 pounds) of product.

C. NSPS—

1. Conventional pollutants—The pollutants controlled by this regulation include the statutory conventional pollutants BOD*5*, TSS, and pH.

2. Toxic pollutants—The toxic pollutants controlled by this regulation are trichlorophenol, pentachlorophenol, chloroform, and zinc.

These pollutants are subject to numerical limitations expressed in kilograms per thousand kilograms (pounds per 1000 pounds) of product, except pH for which an allowable discharge range is established.

D. PSES AND PSNS—The pollutants specified for control by proposed PSES and PSNS include trichlorophenol, pentachlorophenol, and zinc. The toxic pollutant chloroform has been found to be effectively controlled through the application of biological treatment, the type of treatment most commonly used at POTWs. Therefore, chloroform is not regulated under PSES or PSNS.

The PSES and PSNS effluent limitations are expressed as allowable maximum daily concentrations (milligrams per liter). Mass limitations (kg/kkg or lb/1000 lb of product) are provided as guidance in cases where it is necessary to impose mass limitations for control of pollutants discharged from pulp, paper, and paperboard mills contributing to POTWs.

XV. Pollutants and Subcategories Not Regulated

The Settlement Agreement contained provisions authorizing the exclusion from regulation, in certain instances, of toxic pollutants and industry subcategories. These provisions have been re-written in a Revised Settlement Agreement that was approved by the United States District Court for the District of Columbia on March 9, 1979.

A. *Pollutants Excluded.* Paragraph 8(a)(iii) of the Revised Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants not detectable by section 304(h) analytical methods or other state-of-the-art methods. The toxic pollutants not detected and, therefore, excluded from regulation are listed in APPENDIX B to this notice.

Paragraph 8(a)(iii) of the Revised Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants that are present in amounts too small to be effectively reduced by technologies known to the Administrator. APPENDIX C lists the toxic pollutants that were detected in amounts too small to be effectively reduced by available technologies, and which, therefore, are excluded from regulation.

It has also been determined that no nonconventional pollutants associated with the production of pulp, paper, and

paperboard will be regulated through establishment of BAT, NSPS, PSES, or PSNS. Color will be controlled on a case-by-case basis as dictated by water quality considerations. The Agency is seeking public comment on ammonia discharges from integrated mills where ammonia-based cooking chemicals are used; limited information is currently available on the discharge of this nonconventional pollutant. Limited information exists on the levels of resin acids and their derivatives present in wastewater discharges from the pulp, paper, and paperboard industry. This sparcity of data makes it impossible at this time to establish uniform national standards limiting the discharge of these compounds.

B. *Subcategories Excluded.* The limitations in this regulation have been developed to cover the general case for this industry category. In specific cases, it may be necessary for the NPDES permitting authority to establish permit limits on toxic pollutants that are not subject to limitation in this regulation (see RELATIONSHIP TO NPDES PERMITS).

While the Settlement Agreement requires EPA to regulate portions of the pulp, paper, and paperboard industry listed under the U.S. Department of Commerce, Bureau of the Census, Standard Industrial Classification (SIC) code numbers 2600 and 2700, Paragraph 8(a)(iv) of the Revised Settlement Agreement authorizes EPA to exclude portions of the industry from regulation. Pulp Mills (SIC 2611), Paper Mills, except Building Paper Mills (SIC 2621), Paperboard Mills (SIC) 2631), and Building Paper and Building Board Mills (SIC 2661) are covered by this regulation. One exception is the groundwood-chemi-mechanical subcategory for which BPT effluent limitations have been established; however, BAT, BCT, NSPS, PSES, and PSNS regulations are not proposed at this time. There are only 3 mills in this subcategory and insufficient data are available at this time to determine the effect of the degree of chemical usage in the pulping process on raw waste generation. Toxic pollutants that were detected in discharges from mills in this subcategory were detected in amounts too small to be effectively reduced by technologies known to the Administrator. Mills in this subcategory will be assigned permit limitations on a case-by-case basis.

Available information on the remaining subgroups, known as the converted paper industry (SIC 2641, SIC 2642, SIC 2643, SIC 2645, SIC 2646, SIC 2647, SIC 2648, SIC 2649, SIC 2651, SIC 2652, SIC 2653, SIC 2654, SIC 2655, and SIC 2682), was reviewed and the Agency has concluded that facilities listed in these Standard Industrial Classifications should be excluded from regulation under Paragraph 8(a)(iv). Process wastewater flow rates from these facilities are generally low, with the median rate estimated at zero. The process wastewater that is discharged is usually measured in tens of gallons per day and is limited to clean-ups in printing, gluing, and coating operations. While potential exists for discharge of heavy metals and other priority pollutants in operations using inks and coating materials, total amounts of toxic pollutants discharged are expected to be insignificant because flows are characteristically low. One reason that the converted paper industry was included in the Settlement Agreement was because of the presumed potential for PCB discharge. However, PCBs have not been used in the converted paper industry since 1972. PCBs entering the paper cycle today are found only in repulping operations which are regulated under the secondary fiber subcategories of the pulp, paper, and paperboard industry.

XVI. Monitoring Requirements

The Agency intends to establish a regulation requiring permittees to conduct additional monitoring when they violate their permit limitations. The provisions of such monitoring requirements will be specified for each permittee and may include analysis for some or all of the toxic pollutants or the use of biomonitoring techniques. The additional monitoring is designed to determine the cause of the violation, necessary corrective measures, and the identity and quantity of toxic pollutants not specifically limited in the permit which are discharged during the violation. Each violation will be evaluated on a case-by-case basis by the permitting authority to determine whether or not the additional monitoring contained in the permit is necessary. A more lengthy discussion of this requirement appears at 44 FR 34407, June 14, 1979. The Agency intends to amend 40 CFR Part 403, General Pretreatment Regulations. The Part 403 amendment will require that parameters limited by the pretreatment standards be monitored at indirect discharging plants.

XVII. Costs, Effluent Reduction Benefits, and Economic Impacts

Executive Order 12044 requires EPA and other agencies to perform Regulatory Analyses of certain regulations. (See 43 FR 12661 (March 23, 1978)). EPA's proposed regulations for implementing Executive Order 12044 require a Regulatory Analysis for major significant regulations involving annualized compliance costs of more than $100 million or meeting other specified criteria. (See 43 FR 29891 (July 11, 1978)). Where these criteria are met, the proposed regulations require EPA to prepare a formal Regulatory Analysis, including an economic impact analysis and an evaluation of alternatives such as: (1) alternative types of regulations, (2) alternative stringency levels, (3) alternative timing, and (4) alternative methods of ensuring compliance.

The proposed regulations for the pulp, paper, and paperboard industry meet the proposed criteria for a formal Regulatory Analysis. This proposed rulemaking satisfies the formal regulatory analysis requirements. While the Clean Water Act does not permit consideration of alternative timing or alternative methods of ensuring compliance, EPA has considered alternative stringency levels and alternative types of regulations, as discussed above. Moreover, the Agency has performed a detailed analysis of the economic impact of these proposed regulations.

EPA's economic assessment is set forth in *Economic Impact Analysis of Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Pulp, Paper, and Paperboard Mills Point Source Category,* November 1980. This report details the investment and annualized costs for the industry as a whole and for each subcategory for each option, including the proposed option. The report also explains, in detail, the methodology used to derive the impacts as well as the impacts themselves. The data underlying the analysis were obtained from the Development Document, publicly available financial publications and surveys, and the results of EPA's financial survey program described under DATA-GATHERING EFFORTS. The report assesses the impact of those costs in terms of price and production changes, mill profitability effects, mill closures, employment impacts, community effects, and effects on the balance of trade.

A. *Economic Impact Methodology.* The methodology used in the economic analysis is applied microeconomics where a supply and demand analysis is performed to determine the price, production, capacity utilization, and profitability of mills in the industry before and after the imposition of water pollution controls. Standard capital budgeting techniques are used to project

the impact on mill profitability, number of closures, and the lost capacity from those closures that could result from the costs of pollution control necessary to meet proposed effluent limitations.

Using information on production costs contained in the responses to the financial survey, supply curves were generated for each of several generic pulp, paper, and paperboard product sectors. As outlined in Section VI, several technical subcategories contribute to the total production in any product sector. Price, production, and profitability impacts are based on the projected supply and demand characteristics of product sectors and are presented as such. The closure and capacity loss impacts result from changes in prices and production, but have been calculated on a mill-by-mill basis. Thus, they can be presented by generic mill type.

The impact of the regulation on employment as a result of projected closures cannot be presented on a specific basis. This is the result of the limitations on the output and use of the data outlined under DATA-GATHERING EFFORTS. The Agency may, however, present general information on the total employment impacts and the total capacity of the affected mills.

Employment data was not requested in the financial survey since it had already been requested in the technical survey. Because of limitations in the third party agreement, this information could not be directly included in the data base. As a result, employment figures were used as part of analytical computer programs to associate employment with mill information held in the data base. The employment impacts are presented using the aggregates of the total employment associated with all mills projected to close. These estimates are presented for each generic mill type.

Since any output showing data from a single mill could not be shown, the sites of mills projected to close, either with or without establishment of the proposed regulations, could not be included in the analysis or seen by the Agency. As can be seen below, however, the aggregate volume of daily production capacity lost along with the number of mills projected to close can give a good approximation of the size range of the plants affected by the regulations.

The effects of mill closings on communities also cannot be determined accurately. The determination of community impacts is based on a knowledge of the number of employees affected and their location, information again not available to the Agency due to the limitations contained in the third party agreement. The possible impacts of closures on regions of the country have been estimated based on income loss. Income loss is estimated based on the revenues of mills projected to close. Revenue figures are reported in the financial survey.

The impacts of the regulation on the balance of trade are quantitatively and qualitatively determined. These impacts are based on the past behavior of the product sectors in international markets and on the projected prices of domestic production relative to foreign production. The prices of each product type are input to an international paper trade econometric model. Domestic prices are quantitatively determined in the analysis. However, insufficient information is available for the Agency to evaluate the future business environment of foreign producers with great certainty. Thus, a qualitative study of probable changes in the foreign sector environment is made and the conclusions are studied with the results of the econometric model. A judgment of the ability of domestic producers to compete in foreign markets is then made.

The decision criteria for determining projected mill closures were based on standard cash flow and net present value (NPV) analyses. The cash flows of the mills are calculated based on the expected mill revenues resulting from the prices found in the supply and demand analysis and the mills' costs of production as found in the financial survey responses. These are projected over the life of the pollution control investment and discounted at the industry's cost of capital. If the NPV of the total cash flow of a mill over the life of the investment is less than the salvage value of the mill (working capital plus a portion of the mill's book value), then the mill is projected to close.

B. *Economic Impacts for Mill Types.*

Integrated Mills. The Agency projects 150 of the 187 direct discharging mills in this segment for which the Agency has economic information will incur costs to comply with the proposed BCT regulations. The Agency expects that the remaining direct discharging mills will not require additional controls or costs to comply with the proposed regulations because they are already meeting the proposed guidelines. The mill capacity requiring expenditures for BCT is assumed to include existing mill capacity and the added capacity the Agency expects to be operable before the end of 1982. EPA estimates that the industry will invest $1.1 billion and have annual costs of compliance including depreciation, interest, operating, and maintenance costs of $338 million per year at the projected 1982 industry capacity.

EPA expects that six of the 218 mills in this segment for which the Agency has economic information will close due to factors unrelated to the proposed regulations. The Agency also projects that one mill in this segment will close as a result of the regulations. However, the Agency expects that one mill will remain open that would close if no regulations were implemented. This is due to its improved competitive standing after imposition of pollution controls.

Achievement of the proposed BCT limitations by the integrated mills segment of the industry will reduce conventional pollutant discharge (BOD*5* and TSS) to the Nation's waterways by 155 million kg (342 million pounds) per year. The Agency finds that these effluent reduction benefits are achieved at costs between $0.68 and $2.24 per kg ($0.31 and $1.02 per pound) of BOD*5* and TSS removal. These costs are reasonable as defined under the Agency's BCT cost-reasonableness determination methodology (see 44 FR 50732; August 29, 1979).

Secondary Fiber Mills. The Agency projects that 60 of the 84 direct discharging mills in this segment for which the Agency has economic information will incur costs to comply with the proposed regulations. The Agency expects that the remaining direct discharging mills will not require any additional controls or costs to comply with the regulations because they are already meeting the proposed guidelines. The mill capacity requiring expenditures for BCT is assumed to include existing mill capacity and the added capacity the Agency expects to be operable before the end of 1982. EPA estimates that the industry will invest $57 million and have annual costs of compliance including depreciation, interest, and operating and maintenance costs of $21 million per year at the projected 1982 industry capacity.

EPA expects that 25 of the 273 mills in this segment for which the Agency has economic information will close due to factors unrelated to the proposed regulations. The Agency also projects that five mills in this segment will close as a result of these regulations. However, the Agency expects that two mills will remain open that would close if no regulations were implemented. This is due to their improved competitive standing after imposition of pollution controls.

Achievement of the proposed BCT limitations by the secondary fiber mills segment of the industry will reduce

conventional pollutant discharges (BOD5 and TSS) to the Nation's waterways by 6.73 million kg (14.8 million pounds) per year. The Agency finds that these effluent reduction benefits are achieved at costs of between $0.22 and $1.50 per kg ($0.10 and $0.68 per pound) of BOD5 and TSS removal. These costs are reasonable as defined under the Agency's BCT cost-reasonableness determination methodology (see 44 FR 50732, August 29, 1979).

Nonintegrated Mills. The Agency projects that 47 of the 80 direct discharging mills in this segment for which the Agency has economic information will incur costs to comply with the proposed regulations. The Agency expects that the remaining direct discharging mills will not require additional controls or costs to comply with the proposed regulations because they are already meeting the proposed guidelines. The mill capacity requiring expenditures is assumed to include existing mill capacity and the added capacity the Agency expects to be operable before the end of 1982. EPA estimates that the industry will invest $29 million and have annual costs including depreciation, interest, and operating and maintenance costs of $8.0 million per year at the projected 1982 industry capacity.

EPA expects that 26 of the 143 mills in this segment for which the Agency has economic information will close due to factors unrelated to the proposed regulations. The Agency also projects that one mill in this segment will close rather than invest in pollution control equipment. However, the Agency expects that one mill will remain open that would close if no regulations were implemented. This is due to its improved competitive standing after imposition of pollution controls. These effects serve to provide a small net gain in capacity for this segment.

Achievement of the proposed BCT limitations by the nonintegrated mills segment of the industry will reduce conventional pollutant discharges (BOD5 and TSS) to the Nation's waterways by 6.18 million kg (13.6 million pounds) per year. The Agency finds that these effluent reduction benefits are achieved at costs of between $0.51 and $1.72 per kg ($0.23 and $0.78 per pound) of BOD5 and TSS removal. These costs are reasonable as defined under the Agency's BCT cost-reasonableness determination methodology (see 44 FR 50732, August 29, 1979).

C. *Economic Impacts for Product Sectors.* As noted above, the technical subcategories or segments do not reflect the market for final pulp, paper, or paperboard products. Mills in several technical subcategories contribute to the total production of any single product sector. Presented below are the impacts on prices, production costs, production volume, and the contribution to capital (profitability) in each product sector expected due to the proposed regulations.

Market Pulp. Market pulp is pulp sold to pulp consumers such as nonintegrated paper mills. The production considered in this product sector does not include pulp transferred between two company owned mills in this country, but does include pulp transferred to affiliated mills outside this country. By definition, the product sector does not include dissolving pulp, which is discussed below. The domestic capacity to produce pulp is approximately 45 million kkg (50 million tons) per year. Almost all of this pulp is used on-site to produce final pulp, paper, and paperboard products. At those mills where more pulp is produced than necessary to sustain their own operations or those where pulp only is produced, pulp is sold for use at other mills where pulp is either not manufactured (nonintegrated mills) or not enough is manufactured on-site to supply their own needs. The amount of pulp sold in this way was 5.8 million kkg (6.4 million tons) in 1978, or about 12.8 percent of the total domestic pulp production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 4.5 to 7.0 percent at the affected mills. The effects of the proposed regulations on prices, production, and the product sector's contribution to capital cannot be determined.

Dissolving Pulp. Dissolving pulp is highly refined chemical cellulose which is converted by chemical processes into rayon, cellophane, acetate, and cellulose derivatives. The domestic capacity to produce dissolving pulp is approximately 1.4 million kkg (1.5 million tons) per year, or 1.75 percent of the total domestic capacity for pulp, paper, and paperborad production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of approximately 0.6 percent. A price increase of 2.85 percent and a production decrease of 2.09 percent are also expected The combined effect of these two impacts will be to add 4.0 percent to the product sector's contribution to capital (profitability).

Unbleached Kraft Paper. Unbleached kraft paper is paper produced with over 50 percent virgin wood fibers. The paper is used for wrapping paper, shipping sacks, bags, and other papers. The domestic capacity to produce unbleached kraft paper is approximately 4.1 million kkg (4.5 million tons) per year, or 5.1 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.7 to 2.5 percent. A price increase of 0.69 percent and a production decrease of 0.75 percent are also expected. The combined effect of these two impacts will be to subtract 1.3 percent from the product sector's contribution to capital (profitability).

Bleached Kraft Paper. Bleached kraft paper contains over 50 percent virgin wood fibers bleached to a specific brightness. The paper is used as delicatessen paper, butcher's paper, bags, shipping sacks, wrapping paper, and other bleached papers. The domestic capacity to produce bleached kraft paper is approximately 1.1 million kkg (1.2 million tons) per year, or 1.24 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.7 to 3.5 percent. A price increase of 0.83 percent and a production decrease of 2.26 percent are also expected. The combined effect of these impacts will be to subtract 5.9 percent from the product sector's contribution to capital (profitability).

Glassine and Grease Proof Papers. Glassine and grease proof papers are papers made for converting to products such as waxed paper, parchment paper, glassine, waxing, and greaseproof papers. These papers include glassine, greaseproof, vegetable parchment, and some bleached or unbleached sulfite papers. The domestic capacity to produce glassine and greaseproof papers is approximately 0.21 million kkg (0.23 million tons) per year, or 0.26 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.0 percent. A price increase of 1.83 percent and a production decrease of 5.94 percent are also expected. The combined effect of these impacts will be to add 7.7 percent to the product sector's contribution to capital (profitability).

Special Industrial Paper. Special industrial papers are papers of all types design for specialized end uses. Products considered to be special industrial papers include abrasive

papers, electrical (transformer) board, vulcanizing paper, pipe wrap insulation, impregnating paper, gasket stock, electrical insulation paper, and absorbent papers. The domestic capacity to produce special industrial papers is approximately 0.91 million kkg (1.0 million tons) per year, or 1.13 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.2 to 2.2 percent. A price increase of 0.61 percent and a production decrease of 0.48 percent are also expected. The combined effects of these impacts will be to add 0.9 percent to the product sector's contribution to capital (profitability).

Newsprint. Newsprint is paper made largely from groundwood pulp and used chiefly in the printing of newspapers. The domestic capacity to produce newsprint is approximately 5.3 million kkg (5.8 million tons) per year or 6.64 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 2.5 to 4.8 percent. A price increase of 3.2 percent and a production decrease of 0.87 percent are also expected. The combined effect of these two impacts will be to add 3.8 percent to the product sector's contribution to capital (profitability).

Coated Printing Paper. Coated printing paper is bleached paper coated on one or both sides with a substance which is at least 50 percent pigment. Printing papers coated on one side are almost always used for labels and wraps, especially in the processed food industries. The highest grades of printing paper coated on both sides are used for high quality media and advertising paper while lower grades are used for the printing of magazines. The domestic capacity to produce coated printing paper is approximately 5.0 million kkg (5.5 million tons) per year, or 6.28 percent of total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.8 to 2.0 percent. A price increase of 0.49 percent and a production decrease of 0.20 percent are also expected. The combined effect of these two impacts will be to subtract 1.0 percent from the product sector's contribution to capital (profitability).

Uncoated Freesheet. Uncoated freesheet is bleached, uncoated printing and writing paper containing no more than 25 percent groundwood pulp fibers. Uncoated freesheet is used as offset, tablet, text book, envelope, and business papers such as bond, ledger, mimeo, and duplicator papers. The domestic capacity to produce uncoated freesheet paper is approximately 8.2 million kkg (9.0 million tons) per year, or 10.25 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.3 to 2.6 percent. A price increase of 0.80 percent and a production decrease of 0.19 percent are also expected. The combined effect of these impacts will be to subtract 0.5 percent from the product sector's contribution to capital (profitability).

Uncoated Groundwood Paper. Uncoated groundwood paper is paper containing more than 25 percent groundwood pulp fibers, excluding newsprint. Uncoated groundwood paper is used as a coating base stock, groundwood paper for converting to other products, and as printing paper. The domestic capacity to produce uncoated groundwood paper is approximately 1.6 million kkg (1.8 million tons) per year, or 2.04 percent of total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.6 to 2.1 percent. No price increases or production decreases are expected. However, the added cost of the proposed regulations will subtract 2.6 percent from the product sector's contribution to capital (profitability).

Thin Papers. Thin papers are thin specialty papers used for such products as tracing paper, onionskin, one-time carbonizing paper, Bible paper, translucents, condenser paper, and cigarette paper. The domestic capacity to produce thin papers is approximately 0.36 million kkg (0.4 million tons) per year, or 0.51 percent of total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.7 percent. A price increase of 0.20 percent and a production decrease of 0.08 percent are also expected. The combined effect of these impacts will be to subtract 1.7 percent from the product sector's contribution to capital (profitability).

Solid Bleached Bristols. Solid bleached bristols are either coated or uncoated heavyweight papers. Solid bleached bristols are used for products such as tag stock, file folder stock, index, uncoated printing paper, coated bristols, tabulating index board, postcards, manila paper, manila board, and illustration board. The domestic capacity to produce solid bleached bristols is approximately 1.0 million kkg (1.1 million tons) per year, or 1.28 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.7 to 3.0 percent. A price increase of 0.67 percent and a production decrease of 0.24 percent are expected. The combined effect of these impacts will be to subtract 0.8 percent from the product sector's contribution to capital (profitability).

Cotton Fiber Paper. Cotton fiber paper is paper with 25 percent or more of its fiber content from cotton, cotton rags, cotton linters, flax, or similar fibers. Products such as ledger paper, currency paper, linen paper, and fine writing papers are examples of cotton fiber papers. The domestic capacity to produce cotton fiber paper is approximately 0.12 million kkg (0.13 million tons per year, or 0.15 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.6 percent. A price increase of 0.08 percent and a production decrease of 0.15 percent are also expected. The combined effect of these impacts will be to subtract 0.2 percent from the product sector's contribution to capital (profitability).

Tissue. Tissue papers are sanitary papers found in both industrial and consumer grades. Industrial tissue is used for products such as cellulose wadding, industrial wipes, and napkin stock. Consumer tissue products are those made for retail sale such as napkins, towels, wipes, sanitary napkins, toilet tissue, facial tissue, and diaper liners. The domestic capacity to produce tissue papers is approximately 4.9 million kkg (5.4 million tons) per year, or 6.20 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.5 to 3.2 percent. A price increase of 0.23 percent and a production decrease of 0.01 percent are projected. The combined effect of these impacts will be to subtract 0.3 percent from the product

sector's contribution to capital (profitability).

Unbleached Kraft Linerboard. Unbleached kraft linerboard is paperboard containing at least 80 percent virgin wood fibers and is produced by the kraft process. It is used as the facing material on corrugated or solid fiber boxes. The domestic capacity to produce unbleached kraft linerboard is approximately 14.6 million kkg (16.1 million tons) per year, or 18.29 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 2.3 to 2.5 percent. A price increase of 1.86 percent and a production decrease of 0.94 percent are also expected. The combined effect of these impacts will be to subtract 0.9 percent from the product sector's contribution to capital (profitability).

Bleached Kraft Linerboard. Bleached kraft linerboard is paperboard containing at least 80 percent virgin wood fiber and is produced through the kraft process. Bleached kraft linerboard is used for such products as retail store display stands, advertising paper, and is converted into cigarette and similar boxes. The domestic capacity to produce bleached kraft linerboard is approxiamtely 0.13 million kkg (0.14 million tons) per year or 0.16 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 2.9 percent. A price increase of 2.63 percent and a production decrease of 0.99 percent are also expected. The combined effect of these impacts will be to subtract 1.5 percent from the product sector's contribution to capital (profitability).

Bleached Kraft Foldingboard. Bleached kraft foldingboard is paperboard made from at least 80 percent virgin wood fibers and is produced using the kraft process. Examples of bleached kraft foldingboard products are containers for ice cream, butter, oleomargarine, frozen foods, cosmetics, and drugs found at retail stores. The domestic capacity to produce bleached foldingboard is approximately 2.1 million kkg (2.3 million tons) per year, or 2.58 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 2.6 percent. A price increase of 3.57 percent and a production decrease of 2.52 percent are also expected. The combined effect of these impacts will be to subtract 3.7 percent from the product sector's contribution to capital (profitability).

Semi-Chemical Corrugating Medium. Semi-chemical corrugating medium is paperboard made from at least 75 percent virgin wood fibers that are processed using the semi-chemical process. It is used as the inner layer or layers of a corrugated box and faced with linerboard for conversion into corrugated boxes. The domestic capacity to produce semi-chemical corrugating medium is approximately 5.0 million kkg (5.5 million tons) per year, or 6.28 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 3.1 to 3.6 percent. A price increase of 2.48 percent and a production decrease of 1.76 percent are also expected. The combined effect of these impacts will be to add 1.6 percent from the product sector's contribution to capital (profitability).

Recycled Linerboard. Recycled linerboard is paperboard made from recycled paper of various grades and contains less than 80 percent virgin wood fibers. It is used as the facing of corrugated boxes. The domestic capacity to produce recycled linerboard is approximately 0.36 million kkg (0.4 million tons) per year, or 0.47 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 2.5 percent. A price increase of 0.18 percent and a production increase of 0.01 percent are also expected. This production increase is the result of a shift in demand away from the higher-priced kraft linerboards to recycled linerboard. The combined effect of these impacts will be to add 0.6 percent to the product sector's contribution to capital (profitability).

Recycled Corrugating Medium. Recycled corrugating medium is paperboard produced having less than 75 percent virgin wood fibers and is predominately made from recycled paper of varying grades. It is used as the inner layer or layers of corrugated boxes. This product sector also includes container chip and filler board. The domestic capacity to produce recycled corrugating medium is approximately 1.7 million kkg (1.9 million tons) per year, or 2.16 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.7 percent. A price increase of 1.41 percent and a production increase of 1.90 percent are also expected. This projected increase in production is the result of a shift in the demand for corrugating medium away from the higher priced semi-chemical type to the recycled type. The combined effect of these two impacts will be to add 1.94 percent to the product sector's contribution to capital (profitability).

Recycled Foldingboard. Recycled foldingboard is paperboard made from recycled fibers from various paper grades. It is converted into folding cartions or into rigid or set-up boxes, depending on the bending quality of the board. The domestic capacity for producting recycled foldingboard is approximately 2.9 million kkg (3.2 million tons) per year, or 3.63 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.7 to 2.8 percent. A price increase of 0.07 percent and a production decrease of 0.08 percent are also expected. The combined effect of these impacts will be to subtract 0.5 percent from the product sector's contribution to capital (profitability).

Solid Bleached Board. Solid bleached board is paperboard made from at least 80 percent virgin fibers and bleached to a specified brightness. Solid bleached board products include milk cartons, packaging for moist or oily foods, and paper cups. The domestic capacity to produce solid bleached bristols is approximately 2.0 million kkg (2.2 million tons) per year, or 2.46 percent of the total domestic capacity for pulp, paper, and paperboard production.

The agency projects that the costs of the proposed regulations will result in an increase in production costs of 1.9 to 3.7 percent. A price increase of 0.72 percent and a production decrease of 0.64 percent are also expected. The combined effect of these impacts will be to subtract 0.4 percent from the product sector's contribution to capital (profitability).

Molded Pulp Products. Molded pulp products are pressed and molded goods made from either virgin fiber pulp or wastepaper pulp. These products include egg cartons, paper plates, food trays, and paper mache articles. The domestic capacity to produce molded pulp products is approximately 0.27 million kkg (0.3 million tons) per year, or 0.31 percent of the total domestic

capacity for pulp, paper, and paperboard production.

The Agency projects that the proposed BPT regulations will cause a 6.9 percent increase in production costs. The Agency also projects that the costs of the proposed BCT regulations will result in an increase in production costs of 0.6 percent over those for BPT. Price increases, production impacts and effects on contribution to capital (profitability) cannot be estimated for this product sector though price increases are limited to the cost increase.

All Other Board. All other board products include products made from either virgin fiber or wastepaper pulps. Examples of these are tube board, tag board, ticket stock, gypsum wall board facings, and match stem board. The domestic capacity produce all other board is approximately 4.1 million kkg (4.5 million tons) tons per year, or 5.10 percent of the total domestic capacity for pulp, paper and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 3.7 percent. A price increase of 0.14 percent and a production decrease of 0.07 percent are also expected. The combined effect of these impacts will be to subtract 3.7 percent from the product sector's contribution to capital (profitability).

Contruction Paper and Board. Construction paper and board are paper and board products predominately made from recycled fibers for use in converting to other products not typically connected to the pulp, paper, and paperboard industry. The products for which construction paper and board forms the base include asphalted paper and board, sheathing, insulating building paper and board, wallboard, roofing (prepared and shingles), panelboard, millboard, wallpaper, pressboard, accoustical board and title, asbestos paper and board, felt fiberboard, and hardboard. The domestic capacity to produce construction paper and board is approximately 6.7 million kkg (7.4 million tons) per year, or 8.38 percent of the total domestic capacity for pulp, paper, and paperboard production.

The Agency projects that the costs of the proposed regulations will result in an increase in production costs of 0.2 to 1.2 percent. No price increases or production decreases are expected. However, the effect of the costs of the proposed regulations will be to subtract 0.3 percent from the product sector's contribution to capital (profitability).

XVIII. Non-Water Quality Aspects of Pollution Control

The elimination or reduction of one form of pollution may aggravate other environmental problems. Therefore, sections 304(b) and 306 of the Act require EPA to consider the non-water quality environmental impacts (including energy requirements) of certain regulations. In compliance with these provisions, EPA has considered the effect of these regulations on air pollution, solid waste generation, and energy consumption. While it is difficult to balance pollution problems against each other and against energy use, EPA is proposing regulations which it believes best serve often competing national goals.

The following are the non-water quality environmental impacts associated with the proposed regulations:

A. Air Pollution—Implementation of BAT, BCT, NSPS, PSES, and PSNS are not anticipated to result in any incremental increase in air pollution from the pulp, paper, and paperboard industry.

B. Solid Waste—EPA estimates that the total solid waste generated as a result of attainment of BAT, BCT, and PSES will increase by about 1.3 percent of the present industry total. Information on which these estimates are based is contained in Sections IX, X, XI, XII, XIII, and XIV of the Development Document.

The solid wastes generated through wastewater treatment at pulp, paper, and paperboard mills have not been listed as hazardous in regulations recently promulgated by the Agency under Subtitle C of the Resource Conservation and Recovery Act (RCRA) (see 45 FR 33066 (May 19, 1980)). A recent study by EPA's Office of Solid Waste indicates that most leachates from this industry are non-hazardous under RCRA testing protocols (see *disposal Practices for Selected Industrial Solid Wastes,* EPA, Washington, D.C. (May 1980)). Accordingly, it does not appear likely that the industry will be subject to the comprehensive RCRA program establishing requirements for persons handling, transporting, treating, storing, and disposing of hazardous waste.

C. Energy Requirements—EPA estimates that the attainment of proposed BAT, BCT, and PSES will increase energy consumption by about 0.9 percent over present industry use. Proposed PSNS will result in no increase in energy usage. Information on which these estimates are based is contained in Sections IX, X, XI, XII, XIII, and XIV of the Development Document.

XIX. Best Management Practices

Section 304(e) of the Clean Water Act authorizes the Administrator to prescribe what have been termed "best management practices (BMPs)" described under AUTHORITY and BACKGROUND. In the future, EPA intends to develop BMPs which are: (1) Generic in nature and applicable to all industrial sites; (2) specfic in nature and applicable to a specified industrial category; and (3) guidance to permit authorities in establishing BMPs required by unique circumstances at a given plant.

XX. Upset and Bypass Provisions

An issue of recurrent concern has been whether industry guidelines should include provisions authorizing noncompliance with effluent limitations during periods of "upset" or "bypass." An upset, sometimes called an "excursion," is unintentional noncompliance occurring for reasons beyond the reasonable control of the permittee. An upset provision is necessary, it has been argued, because such upsets will inevitably occur due to limitations in control technology. Because technology-based limitations are to require only what technology can achieve, it is claimed that liability for such situations is improper. When confronted with this issue, courts have been divided on the question of whether an explicit upset or excursion exemption is necessary or whether upset or excursion incidents may be handled through EPA's exercise of enforcement discretion. (Compare *Marathon Oil Co.* v. *EPA,* 564 F2d 1253 (9th cir. 1977) with *Weyerhaeuser* v *Costle,* 590 F.2d 1011 (D.C. Cir. 1978), and see *American Petroleum Institute* v. *EPA, 540 F.2d 1023 (10th Cir. 1976); CPC International, Inc.* v. *Train,* 540 F.2d 973 (4th Cir. 1976).)

While an upset is an unintentional episode during which effluent limits are exceeded, a bypass is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. Bypass provisions have, in the past, been included in NPDES permits.

EPA has determined that both upset and bypass provisions should be included in NPDES permits, and has recently promulgated NPDES regulations which include upset and bypass permit provisions. ((See 45 FR 33290, 33448; 40 CFR 122.60(G)(H))(May 19, 1980)). The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology-based effluent limitations. The pypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property

damage. Consequently, although permittees in the pulp, paper, and paperboard industry will be entitled to upset and bypass provisions in NPDES permits, these proposed regulations do not specifically address these issues.

XXI. Variances and Modifications

Upon the promulgation of these regulations, the numerical effluent limitations for the appropriate subcategory must be applied in all Federal and State NPDES permits issued to pulp, paper, and paperboard direct dischargers. In addition, on promulgation, the pretreatment limitations are directly applicable to indirect dischargers.

For the BCT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. (See *E. I. duPont de Nemours and Co.* v. *Train,* 430 U.S. 112 (1977)). This variance recognizes factors concerning a particular discharger which are fundamentally different from the factors considered in this rulemaking. Although this variance clause was set forth in EPA's 1973–1976 industry regulations, it is included in the NPDES regulations and not the specific pulp, paper, and paperboard industry regulations. (See the NPDES regulations at 40 CFR Part 125 Subpart D; 44 FR 32854, 32893 (June 7, 1979) for the text and explanation of the "fundamentally different factors" variance.)

The BAT limitations in these regulations also are subject to EPA's "fundamentally different factors" variance. In addition, BAT limitations for non-toxic pollutants are subject to modifications under sections 301(c) and 301(g) of the Act. Under section 301(l) of the Act, these statutory modifications are not applicable to "toxic" pollutants.

Pretreatment standards for existing sources are subject to the "fundamentally different factors" variance and credits for pollutants removed by POTWs (See 40 CFR 403.7 and 403.13; 43 CFR 27736 (June 26, 1978)). Pretreatment standards for new sources are subject only to the credit provision (See 40 CFR 403.7; 43 FR 27736 (June 26, 1978) and proposed amendments 44 FR 62260 (October 29, 1979)). New source performance standards are not subject to EPA's "fundamentally different factors" variance or any statutory or regulatory modifications (see *duPont* v. *Train, supra).*

XXII. Relationship to NPDES Permits

The BAT, BCT, and NSPS limitations in these regulations will be applied to individual pulp, paper, and paperboard mills through NPDES permits issued by EPA or approved State agencies, under section 402 of the Act. The preceding section of this preamble discussed the binding effect of these regulations on NPDES permits, except to the extent that variances and modifications are expressly authorized. This section describes several other aspects of the interaction of these regulations and NPDES permits.

First, one matter that has been subject to different judicial views is the scope of NPDES permit proceedings in the absence of effluent limitations guidelines and standards. Under currently applicable EPA regulations, States and EPA Regions issuing NPDES permits prior to promulgation of these regulations must include a "reopener clause," providing for permits to be modified to incorporate BAT regulations when they are promulgated (see 40 CFR 122.62(c); 45 FR 33290, 33449 (May 19, 1980)). Permits issued after June 30, 1981 must meet the requirements of section 301(b)(2) of the Clean Water Act whether or not applicable effluent limitations guidelines have been promulgated (see 40 CFR 122.62(c); 45 FR 33290, 33339 (May 19, 1980)). At one time, EPA had a policy of issuing short-term permits, with a view toward issuing long-term permits only after promulgation of these and other BAT regulations. While the Agency continues to encourage EPA and State permit writers to issue short-term permits to primary industry dischargers until June 30, 1981, EPA has changed its policy to allow more flexibility (see 45 FR 33340 (May 19, 1980)). EPA permit writers may issue long-term permits to primary industries even if guidelines have not yet been promulgated provided that the permits require BAT and BCT and contain reopener clauses. The appropriate technology levels and limitations will be assessed by the permit issuer on a case-by-case basis on consideration of the statutory factors (see *U.S. Steel Corp.* v. *Train,* 556 F.2d 822, 844, 854 (7th Cir. 1977)). In these situations, EPA documents and draft documents (including these proposed regulations and supporting documents) are relevant evidence, but not binding, in NPDES permit proceedings (see 44 FR 32854 (June 7, 1979)).

Another noteworthy topic is the effect of these regulations on the powers of NPDES permit-issuing authorities. The limitations in this regulation have been developed to cover the general case of this industry category. For specific cases, it may be necessary for the NPDES authority to establish limits on pollutants which are not subject to limitation in these regulations. The promulgation of these regulations does not restrict the power of any permit-issuing authority to act on these or any other EPA regulations, guidelines, or policy, in any manner consistent with law. For example, the fact that these regulations do not control a particular pollutant does not preclude the permit issuer from limiting such pollutant on a case-by-case basis, when necessary to carry out the purposes of the Act. In addition, to the extent that State water quality standards or other provisions of state or Federal law require limitations (or require more stringent limitations on covered pollutants), such limitations must be applied by the permit-issuing authority.

One additional topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which have been considered in developing these regulations. The Agency wishes to emphasize that, although the Cleam Water Act is a strict liability statute, the initiation of enforcement proceedings by EPA is discretionary. EPA has exercised and intends to exercise that discretion in a manner which recognizes and promotes good faith compliance efforts and conserves enforcement resources for those who fail to make good faith efforts to comply with the Act.

XXIII. Small Business Administration Financial Assistance

There are two SBA programs that may be important sources of funding for the Pulp, Paper, and Paperboard and the Builders' Paper and Board Mills Point Source Categories. They are the SBA's Economic Injury Loan Program and Pollution Control Financing Guarantees.

Section 8 of the FWPCA amended section 7 of the Small Business Act, 5 U.S.S. § 636, to authorize the SBA through its Economic Injury Loan Program, to make loans to assist small business concerns in effecting additions to or alterations in equipment, facilities, or methods of operation in order to meet water pollution control requirements under the Federal Water Pollution Control Act if the concern is likely to suffer a substantial economic injury without such assistance. This program is open to small business firms as defined by the Small Business Administration (see 44 FR 57914 (October 9, 1979)). Loans can be made either directly by SBA or through a bank using an SBA guarantee. The interest on direct loans depends on the cost of money to the Federal Government and is currently set at 8¼ percent. Loan repayment periods may extend up to thirty years depending on the ability of the firm to repay the loan and the useful life of the equipment.

Firms in the Pulp, Paper, and Paperboard and Builders' Paper and Board Mills Point Source Categories may be eligible for direct or indirect SBA loans. For further details on this Federal loan program write or telephone any of the following individuals at EPA Headquarters or in the ten EPA Regional offices:

Headquarters—Ms. Frances Desselle, Office of Analysis and Evaluation (WH-586), Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, Telephone: (202) 426-7874

Region I—Mr. Ted Landry, Enforcement Division, Environmental Protection Agency, J. F. Kennedy Federal Building, Boston, MA 02203, Telephone: (617) 223-5061

Region II—Mr. Gerald DeGartano, Enforcement Division, Room 432, Environmental Protection Agency, 26 Federal Plaza, New York, NY 10007, Telephone: (212) 264-4711

Region III—Mr. Bob Gunter, Environmental Protection Agency, Curtis Building, 3IR20, 6th and Walnut Streets, Philadelphia, PA 19106, Telephone: (215) 597-2564

Region IV—Mr. John Hurlebaus, Grants Administrative Support Section, Environmental Protection Agency, 345 Courtland Street, N.E., Atlanta, GA 30308, Telephone: (404) 881-4491

Region V—Mr. Arnold Leder, Water and Hazardous Material, Enforcement Branch, Environmental Protection Agency, 230 South Dearborn Street, Chicago, IL 60605, Telephone: (312) 353-2114

Region VI—Ms. Jan Horn, Enforcement Division, Environmental Protection Agency, 1st International Building, 1201 Elm Street, Dallas, TX 75270, Telephone: (214) 729-2760

Region VII—Mr. Paul Walker, Water Division, Environmental Protection Agency, 1735 Baltimore Avenue, Kansas City, MO 64108, Telephone: (816) 374-2725

Region VIII—Mr. Gerald Burke, Office of Grants, Water Division, Environmental Protection Agency, 1860 Lincoln Street, Denver, CO 80203, Telephone: (303) 327-4579

Region IX—Ms. Linda Powell, Permits Branch, Enforcement Division (E-4), Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105, Telephone: (415) 556-3450

Region X—Mr. Danforth Bodien, Enforcement Division, Environmental Protection Agency, 1200 6th Avenue, Seattle, WA 98101, Telephone: (206) 442-1352

Interested persons may also contact the Assistant Regional Administrators for Financial Assistance in the Small Business Administration Regional offices for more details on Federal loan assistance programs. For further information, write or telephone any of the following individuals:

Region I—Mr. George H. Allen, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 60 Batterymarch, 10th Floor, Boston, MA 02110, Telephone: (617) 223-3891

Region II—Mr. John Axiotakis, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 26 Federal Plaza, New York, NY 10007, Telephone: (212) 264-1452

Region III—Mr. David Malone, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 231 St. Asaphs Road, West Lobby, Suite 646, Bala Cynwyd, PA 19004, Telephone: (215) 596-5908

Region IV—Mr. Merritt Scoggins, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1375 Peachtree Street, N.E., Atlanta, GA 30367, Telephone: (404) 881-2009

Region V—Mr. Howard Bondruska, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 219 South Dearborn Street, Chicago, IL 60604, Telephone: (312) 353-4534

Region VI—Mr. Till Phillips, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1720 Regal Row, Suite 230, Dallas, TX 75202, Telephone: (214) 767-7873

Region VII—Mr. Richard Whitley, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 911 Walnut Street, 23rd Floor, Kansas City, MO 64016, Telephone: (816) 374-3210

Region VIII—Mr. James Chuculate, Assistant Regional Administrator for Financial Assistance, Small Business Administration, 1405 Curtis Street, Executive Tower Building, 22nd Floor, Denver, CO 80202, Telephone: (303) 837-3686

Region IX—Mr. Larry J. Wodarski, Deputy Assistant Regional Administrator for Financial Assistance, Small Business Administration, 450 Golden Gate Avenue, San Francisco, CA 94102, Telephone: (415) 556-7782

Region X—Mr. Jack Welles, Regional Administrator, Small Business Administration, 710 2nd Avenue, Dextor Horton Bldg., 5th Floor, Seattle, WA 98104, Telephone: (206) 442-1455.

In addition to the Economic Injury Loan Program, the Small Business Investment Act, as amended by P.L. 94-305, authorizes SBA to guarantee the payments on qualified contracts entered into by eligible small businesses to acquire needed pollution facilities when the financing is provided through tax-exempt revenue or pollution control bonds. This program is open to all eligible small businesses as defined by the Small Business Administration (see 44 FR 57914 (October 9, 1979)). Bond financing with SBA's guarantee of the payments makes available long-term (20-30 years), low interest (7 percent) financing to small businesses. For further details on this program write to the SBA, Pollution Control Financing Division, Office of Special Guarantees, 1815 North Lynn Street, Magazine Bldg., Rosslyn, VA 22209, (703) 235-2900.

XXIV. Summary of Public Participation

In mid-July of 1979, the Agency circulated a contractor's draft technical report entitled "Preliminary Data Base for Review of BATEA Effluent Limitations Guidelines, NSPS, and Pretreatment Standards for the Pulp, Paper, and Paperboard Point Source Category" to a number of interested parties, including the American Paper Institute (API), the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI), the Natural Resources Defense Council, Inc. (NRDC), EPA Regional personnel, and personnel representing all State agencies with permitting authority. The NCASI distributed copies of the report to its member companies. The contractor's draft report did not contain recommendations for effluent limitations guidelines, new source performance standards, or pretreatment standards. Rather, the report presented a summary of the technical information on which the Agency intended to base the currently proposed regulations. The Agency accepted written comments on the draft report until September 21, 1979. Additional written comments were received after that date. A summary of all of the major comments received prior to September 21, 1979, and, to the extent possible, of all major comments received to date is presented here.

1. Comment: The contractor's report deals extensively with toxicity of untreated effluents and ignores a large body of evidence, submitted with the comments, that generally indicates that treated effluents from the pulp, paper, and paperboard industry are not acutely toxic and present no toxicity problems in receiving streams.

Response: The purpose of the contractor's draft report was to present

a summary of the information on which effluent limitations guidelines, new source performance standards, and pretreatment standards would be established. The Clean Water Act of 1977 specifies (1) that effluent limitations and new source performance standards are to be established on a technology basis and (2) that pretreatment standards are to be established to ensure that pollutants do not interfere with, pass through, or otherwise be incompatible with publicly owned treatment works. Paragraph 8 of the Settlement Agreement in *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), modified 12 ERC 1833 (D.D.C. 1979), provides guidance to the Agency on exclusions of specific pollutants, categories, or subcategories from regulations under the effluent limitations guidelines, standards of performance, and/or pretreatment standards. Paragraphs 8(a)(iii) and 8(a)(iv) allow exclusion of specific pollutants if "the pollutant is present only in trace amounts and is neither causing or likely to cause toxic effects," and if for "a category or subcategory, the amount and the toxicity of each pollutant in the discharge does not justify developing national regulations." Paragraph 8(b)(ii) allows exclusion of all point sources within a point source category or point source subcategory from regulation under the pretreatment standards "if the toxicity and amount of the incompatible pollutants (taken together) introduced by such point source into treatment works . . . . that are publicly owned is so insignificant as not to justify developing a pretreatment regulation." Specific references to toxicity are summarized in the Development Document as necessary to support exclusion of pollutants, subcategories, or categories from regulations under the effluent limitations guidelines, standards of performance, or pretreatment standards based on the guidance provided in Paragraph 8 of the Settlement Agreement. All available references relating to toxicity, including those submitted with the comments, are included in the record supporting these proposed rules.

2. Comment: The contractor's draft report fails to provide information on the removal of toxic or nonconventional pollutants that can be attained through the application of the various technology options presented.

Response: At the time of distribution of the contractor's draft report, analysis of information on the removal of toxic and nonconventional pollutants through the application of existing and available treatment techniques had not been completed. The results of the verification sampling program which were presented in the report form the basis of these analyses which are now complete. The treatability of toxic and nonconventional pollutants present in pulp, paper, and paperboard wastewater discharges is discussed in the development document supporting these proposed rules.

3. Comment: Several commentators objected to the method used to establish base level raw waste loads and to the raw waste loads presented as characteristic of loadings resulting from the application of available production process controls. Many felt that the method resulted in the double counting of the pollutant reduction benefits of available production process controls that were in place at certain mills used in the establishment of base level raw waste loadings.

Response: The base level raw waste loads were presented in the contractor's draft report for the purpose of providing a starting point from which to determine pollutant reductions that are attainable after the application of additional production process controls that were not generally applied within a given subcategory. It was recognized that certain of the controls were in place at some individual facilities; however, for a specific production process control to be considered applicable at mills in any subcategory, the control was not in use at the majority of mills in the subcategory.

The Agency recognizes that BPT is the starting point for determination of effluent reduction benefits and incremental costs of BCT and BAT regulations. Therefore, the methodology used to calculate raw waste loads achievable through implementation of additional production process controls has been modified from that presented in the contractor's draft report. This revised methodology and the resulting anticipated raw waste loadings are presented in detail in the development document accompanying these proposed rules. The revised methodology generally involves the establishment of attainable raw waste loads based on the average of the raw waste loads that are demonstrated in each subcategory that are lower than those that formed the basis of development of BPT effluent limitations. Additional production process controls identified as capable of reducing pollutant loadings are those available technologies not being widely practiced in the subcategory. The Agency recognizes that the approach used at individual mills to reduce raw waste loadings will vary. However, this modified approach leads to determinations of raw waste loadings that are achievable and demonstrated.

4. Comment: The use of a "pure" mill approach in establishing guidelines is unnecessary and confusing. The methodology for deriving "pure" mill raw waste loads from actual mill data is unclear, inconsistent, and not statistically valid.

Response: In the contractor's draft report, an attempt was made to account for the diversity that exists within certain subcategories due to such factors as different percentages of pulp produced on-site to manufacture a given product. "Pure" mills, hypothetical mills where distinct unit operations are employed to produce particular products, were defined to be used in establishment of guidelines in an effort to account for these factors. This generally involved predicting raw waste characteristics at pure mills based on actual mill data. For many subcategories, the small number of mills or lack of available data make such predictions extremely difficult and can lead to inaccurate asssessments of the capability of the various technology options considered as the basis of proposed regulations. Because of the inability to check the accuracy of such predictions, the Agency has chosen to base effluent limitations and standards on a model mill approach, similar to that used to establish BPT. Where appropriate, provisions have been made in the regulations to account for the impact of significant factors on the determination of attainable effluent limitations and standards.

5. Comment: The benefits of production process controls are overstated and the estimates of the costs of implementation of this level of technology are understated.

Response: The Agency has reviewed its methodology of determining reductions in raw waste loadings resulting from the implementation of available production process controls and revised this methodology as explained above. Data available to the Agency substantiate the attainability of these raw waste loadings.

EPA intends that the costs of attainment of effluent limitations based on the application of BPT technology plus the addition of applicable production process controls be accurately estimated. EPA does not intend to estimate the costs of implementation of specific production process controls at each mill in the industry. The proposed regulations do not require that specific technology be implemented, only that effluent

limitations be met. Previous cost estimates were reviewed and new cost estimates developed based on application of this technology option. Cost estimates that were received in industry comments that were widely devergent from the Agency contractor's initial estimates involved extensive building modification or the construction of additional chemical recovery capacity that was not contemplated in the preparation of previous and current cost estimates. It is the Agency's opinion that at individual mills where extensive modification and construction would be required to implement a specific production process control, lower cost technology options exist that would allow attainment of the effluent limitations. It is the Agency's position that our current estimates are representative of the costs to attain the effluent limitations based on the implementation of this technology option.

6. Comment: The capability of BPT technology (biological treatment) is overstated in the contractor's draft report. The assumption that biological treatment systems can achieve specified concentrations irrespective of raw waste load is not supported in the contractor's draft report or in the BPT record. Where data exists, the Agency should use that data to determine the capability of biological treatment systems. If data do not exist, the plots of influent versus effluent BOD previously developed by the Agency (see prior Development Document; EPA–440/1–76/047–b, December 1976) could be used to predict the capability of biological treatment systems in removing BOD.

Response: The effluent concentrations presented in the contractor's draft report to predict attainable effluent pollutant levels were based on a preliminary assessment of the capability of biological treatment systems in use in the industry. The Agency has adopted the commenter's recommended approach and has relied on all available data to assess the capability of biological treatment. In fact, the relationships for influent versus effluent BOD mentioned by the commenter have been used in the calculation of effluent BOD from biological treatment systems after the application of production process controls to reduce raw waste loadings (BCT Option 1).

7. Comment: The data base for performance of chemically-assisted clarification is insufficient. Chemical dosage rates assumed in the contractor's draft report are too low and the removal capabilities at the assumed dosage rates are overstated.

Response: Data were submitted to the Agency by industry during the comment period that have served to expand the data base available for evaluation of this technology. Subsequent to the comment period, the Agency has obtained pilot and full-scale data for the application of chemically-assisted clarification to treat the effluent from a mill where bleached kraft fine papers are produced. In addition, several commenters provided information on bench-scale investigations into the proper chemical dosage required to effectively coagulate biologically-treated effluent discharged from facilities representative of several subcategories of the pulp, paper, and paperboard industry. Based on all data available to the Agency in January of 1980, the Agency determined chemical dosage rates representative of that required to effectively coagulate biologically-treated effluents from each of the appropriate subcategories of the pulp, paper, and paperboard point source category.

8. Comment: The application of activated carbon adsorption technology has not been demonstrated for treatment of pulp, paper, and paperboard industry wastewaters. Removal capabilities are overstated and system reliability is questionable.

Response: Information on activated carbon adsorption was presented in the contractor's draft report because it is an available technology for removal of many organic compounds. Many of the 129 specific toxic compounds and the 14 nonconventional pollutants under investigation in this industry are organic compounds, amenable to treatment by the application of activated carbon treatment technology. Therefore, treatment of pulp, paper, and paperboard effluents through application of activated carbon technology was considered to be a viable technology option for removel of toxic and nonconventional organic pollutants. The Agency had not yet completed its assessment of toxic and nonconventional pollutant data at the time of publication of the contractor's draft report. Since that time, the Agency has completed its assessment of the removal capability of existing treatment systems that are attaining BPT effluent limitations. The Agency has determined that little additional toxic or nonconventional pollutant reduction benefit would result from application of this technology in further treating pulp, paper, and paperboard effluents conforming to BPT effluent limitations. As a consequence, the application of granular activated carbon is no longer under consideration as a BAT control and treatment technology option.

9. Comment: Biological pretreatment prior to discharge to a POTW is contrary to Congress' intended support of joint industrial/municipal treatment. Such a requirement could place a significant financial burden on communities with jointly financed municipal-industrial facilities should management of industrial facilities decide to withdraw from POTWs.

Response: Because biological treatment is a proven technology capable of removing many of the toxic pollutants, it was being considered as a pretreatment technology option. This option is no longer being considered by the Agency because a less expensive option is available that ensures that pass through of toxic pollutants or upset of POTWs receiving pulp, paper, and peperboard wastewaters does not occur. Our anslysis of available data indicates that the sources of toxic pollutants (cholorphenolics) that are likely to pass through POTWs are certain slimicide and biocide formulation used at some mills in the industry. Therefore, the most effective technique for removal of these toxic pollutants is the substitution of slimicide and biocide formations that contain toxic pollutants with formulations that do not.

XXV. Solicitation of Comments

EPA invited and encourages public participation in this rulemaking. The Agency asks that any deficiencies in the record of this proposal be pointed to, with specificity and requires that suggested revisions or corrections be supported by data.

EPA is particularly interested in receiving additional comments and information in connection with the following: (1) An alternative methodology for establishing BCT effluent limitations for the pulp, paper, and paperboard industry was submitted by the American Paper Institute (API) about eight months after the end of the formal comment period provided for review of the contractor's draft report. The API proposal involves establishing a set of "best variability performers" (i.e., mills where effluent levels of BOD and TSS within ± 50 percent of BPT are attained and where effluent variability is less than that used in the establishment of BTP). Variability factors for this set of mills have been calculated, averaged, and applied to the annual average BOD and TSS effluent levels that formed the basis of BPT. This resulted in a determination of maximum 30-day and maximum daily BOD and TSS effluent limitations. API states that BCT effluent limitations established by

application of this alternative methodology can be achieved through spill containment and equilization. The basic design of existing biological treatment systems would remain unchanged.

API estimates that attainment of BCT limitations based on this methodology would mean reductions of BOD and TSS on the order of 18 to 28 percent when compared to BPT. API has estimated the capital cost of compliance to be between $0.40 to $0.55 billion, substantially less than that anticipated through attaniment of proposed BCT effluent limitations.

The Agency has completed a review of this alternative approach and has several reservations concerning the methodology: (a) The API methodology arbitrarily establishes a set of "best variability performers" without indicating whether the technologies used at this set of mills are consistent with the technology basis used to estimate the costs of compliance (i.e., spill control and equalization). If the technologies on which effluent limitations are based cannot be related to the set of "best variability performers," a serious deficiency exists in the methodology. Effluent limitations based on such a methodology would likely be found to be arbitrary and capricious; and (b) An assumption is made that no improvement in annual average treatment plant performance will occur through application of spill control and equalization. Contrary to this assumption, it is likely that these technologies will result in improved treatment plant performance. If slug loadings and abrupt pH changes that are known to inhibit the performance of biological treatment systems are eliminated, improvement in overall treatment system performance will result, thus lowering annual average BOD and TSS discharges.

As a part of this rulemaking, EPA requests comments on the appropriateness of API's alternative approach.

(2) In order to provide a more extensive data base for this rulemaking, EPA requests that representatives of pulp, paper, and paperboard mills voluntarily sample and analyze for the toxic pollutants proposed for regulation. Samples should be taken, at a minimum, from intake water, raw wastewater, and pretreated or final effluent where treatment is in place. Voluntary sampling and analyses must be conducted by the same methods used by EPA and, therefore, individuals who intend to participate in this effort should contact Robert W. Dellinger (see ADDRESS at beginning of preamble) for further assistance. Sampling and analysis procedures and a list of laboratories capable of performing the analyses will be made available to those wishing to participate in this program.

(3) EPA requests that mill representatives review all data submitted to the Agency, including data on flow and production, to insure their accuracy.

(4) Characterization of the nature of sludges generated at pulp, paper, and paperboard mills due to wastewater treatment and the costs of sludge handling and disposal are important to these regulations and regulations being developed by EPA's Office of Solid Waste, under authority of the Resource Conservation and Recovery Act (RCRA). The Agency solicits additional data concerning the quantities, pollutant content, and handling and disposal costs for all solid wastes.

(5) Possible underestimation of production process control technology and end-of-pipe treatment costs were issues raised during public comment. In order to perform a meaningful comparison of EPA cost data and industry cost data, EPA requests detailed information on salient design and operating characteristics, estimates of installed cost for each unit or piece of equipment, the date of installation and the amount of installation labor required, and the cost for operation and maintenance broken down into units of usage and cost for energy (kilowatt hours or equivalent), chemicals, and labor (work-years or equivalent). Industry submittals to date have been lacking in sufficient detailed information to enable direct comparision to EPA cost estimates. In many instances, a closer look at industry estimates has indicated that no direct comparison can be made because of significant differences in the assumptions made in estimating costs. Sufficient detail must be provided in comments to provide a thorough understanding of the assumptions used in estimating costs and of the exact system or units for which cost estimates have been provided.

(6) The Agency is seeking additional information on the chemical dosage rates necessary to effect efficient clarification of biologically treated effluents in each of the industry subcategories. Sufficient detailed information must be provided in the comments to enable a determination by the Agency of the optimum dosage rate required to obtain a highly clarified effluent. Submittals to date have been lacking in information such as pH of the wastewater before and after chemical addition, consideration of whether the addition of sulfuric acid and alum will reduce chemical requirements, and methods used in the calculation of solids generation.

(7) The Agency is seeking additional information on ammonia discharges from integrated mills where ammonia-based cooking chemicals are used. Information is sought on raw waste and final effluent levels of ammonia, available end-of-pipe technologies and their capability to remove ammonia, the feasibility of change to a different chemical base, and the costs associated with the application of end-of-pipe or production process control technologies.

(8) The Council on Wage and Price Stability (CWPS) recently submitted to the Agency a detailed study suggesting a different methodology to determine the POTW comparison figure used in the BCT cost-reasonableness test. Copies of the CWPS study are available by contacting Mr. Robert C. Ellis (see FOR FURTHER INFORMATION CONTACT at beginning of preamble).

The CWPS study implies a POTW comparison figure of about 17 cents per pound of BOD and TSS removed, a level that would result in very little control beyond BPT. The Agency is currently reviewing the CWPS study in detail. Any change in the cost-reasonableness test could affect the BCT regulations proposed herein. As part of this rulemaking, EPA requests comments on the appropriateness of the CWPS methodology and analysis.

Dated: December 11, 1980.

Douglas M. Costle,

Administrator.

Appendix A—Abbreviations, Acronyms and Other Terms Used in This Notice

Act—The Clean Water Act

Agency—The U.S. Environmental Protection Agency

BAT—The best available technology economically achievable, under section 301(b)(2)(A) of the Act

BCT—The best conventional pollutant control technology, under section 301(b)(2)(E) of the Act

BMP—Best management practices, under section 304(3) of the Act

BPT—The best practicable control technology currently available, under section 301(b)(1)(A) of the Act

Clean Water Act—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 *et seq.*), as amended by the Clean Water Act of 1977 (Public Law 95–217)

Direct discharger—A facility which discharges or may discharge pollutants into waters of the United States

Indirect discharger—A facility which discharges or may discharge

pollutants into a publicly owned treatment works
NPDES permit—A National Pollutant Discharge Elimination System permit issued under section 402 of the Act
NSPS—New source performance standards under section 306 of the Act
POTWs—Publicly owned treatment works
PSES—Pretreatment standards for existing sources of indirect discharges, under section 307(b) of the Act
PSNS—Pretreatment standards for new sources of indirect discharges, under section 307(c) of the Act
RCRA—Resource Conservation and Recovery Act (PL 94–580) of 1976, Amendments to Solid Waste Disposal Act

Appendix B—Toxic Pollutants Not Detected in Treated Effluents

acenaphthene, acrolein, 1,2,4-trichlorobenzene, hexachlorobenzene, hexachloroethane, chloroethane, bis(2-chloroethyl) ether, 2-chloroethyl vinyl ether, para-chloro-meta-cresol, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 3,3'-dichlorobenzidine, 1,2-dichloropropane, 1,2-diphenylhydrazine, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether, bis(2-chloroisopropyl) ether, bis(2-chloroethoxy) methane, methylene chloride (dichloromethane), methyl chloride (chloromethane), methyl bromide (bromomethane), dichlorodifluoromethane, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitrophenol, 2,4-dinitrophenol, 4,6-dinitro-o-cresol, *n*-nitroso-dimethylamine, *n*-nitroso-di-*n*-propylamine, bis(2-ethylhexyl)phthalate, 1,2-benzanthracene (benzo(a)anthracene), 3,4-benzopyrene (benzo(a)pyrene), 3,4-benzofluoranthene, 11,12-benzofluoranthene (benzo(k)fluoranthene), 1,12-benzoperylene(benzo(ghi)perylene), phenanthrene, dibenzo(a,h)anthracene(1,2,5,6-dibenzanthracene), vinyl chloride (chloroethylene), aldrin, dieldrin, chlordane, 4,4'-DDT, 4,4'-DDE (p,p'-DDX), 4,4'-DDD (p,p'-TDE), a-endosulfan-Alpha, b-endosulfan-Beta, endosulfan sulfate, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, a-BHC-Alpha, b-BHC-Beta, r-BHC (lindane)-Gamma, g/BHC-Delta, toxaphene, asbestos

Appendix C—Toxic Pollutants Detected in Treated Effluents at Amounts Too Small To Be Effectively Reduced by Technologies Known to the Administrator

acrylonitrile, benzene, benzidine, carbon tetrachloride (tetrachloromethane), chlorobenzene, 1,2-dichloroethane, 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, bis (chloromethyl) ether, 2-chloronaphthalene, 2-chlorophenol, 1,2-dichlorobenzene, 1,1-dichloroethylene, 1,2-trans-dichloroethylene, 2,4-dichlorophenol, 1,2-dichloropropylene (1,3-dichloropropene), 2,4-dimethylphenol, 2,4-dinitrotoluene, 2,6-dinitrotoluene, ethylbenzene, fluoranthene, bromoform (tribromomethane), dichlorobromomethane, trichlorofluoromethane, chlorodibromomethane, isophorone, naphthalene, nitrobenzene, 4-nitrophenol, N-nitrosodiphenylamine, phenol, butyl benzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate, chrysene, acenaphthylene, anthracene, fluorene, indeno (1,2,3-cd)pyrene (2,3-o-phenylenepyrene), pyrene, tetrachloroethylene, toluene, trichloroethylene, PCB–1242 (Arochlor 1242),* PCB–1254 (Arochlor 1254),* PCB–1221 (Arochlor 1221),* PCB–1232 (Arochlor 1232),* PCB–1248 (Arochlor 1248),* PCB–1260 (Arochlor 1260),* PCB–1016 (Arochlor 1016),* Antimony (Total), Arsenic (Total), Beryllium (Total), Cadmium (Total), Chromium (Total), Copper (Total), Cyanide (Total), Lead (Total), Mercury (Total), Nickel (Total), Selenium (Total), Silver (Total), Thallium (Total)

It is proposed to amend Title 40 by revising Part 430 to read as follows:

PART 430—THE PULP, PAPER, AND PAPERBOARD POINT SOURCE CATEGORY

Subpart A—Unbleached Kraft Subcategory

Sec.
430.10 Applicability; description of the unbleached kraft subcategory.
430.11 Specialized definitions.
430.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.14 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.15 New source performance standards (NSPS).
430.16 Pretreatment standards for existing sources (PSES).
430.17 Pretreatment standards for new sources (PSNS).

Subpart B—Sodium-Based Neutral Sulfite Semi-Chemical Subcategory

430.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]
430.24 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]
430.25 New source performance standards (NSPS) [Reserved]
430.26 Pretreatment standards for existing sources (PSES) [Reserved]
430.27 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart C—Ammonia-Based Neutral Sulfite Semi-Chemical Subcategory

430.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]
430.34 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]
430.35 New source performance standards (NSPS) [Reserved]
430.36 Pretreatment standards for existing sources (PSES) [Reserved]
430.37 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart D—Unbleached Kraft-Neutral Sulfite Semi-Chemical (Cross Recovery) Subcategory

430.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]
430.44 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]
430.45 New source performance standards (NSPS) [Reserved]
430.46 Pretreatment standards for existing sources (PSES) [Reserved]
430.47 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart E—Paperboard From Wastepaper Subcategory

430.50 Applicability; description of the paperboard from wastepaper subcategory.
430.51 Specialized definitions.

*PCBs have been found at part per billion levels at mills where wastepaper is used as a raw material. Under Paragraph 12 of the Settlement Agreement, the Administrator may establish more stringent effluent limitations, guidelines, standards, or other necessary controls upon a determination that the discharge of PCBs would interfere with the attainment or maintenance of water quality in a specific portion of the navigable waters.

Sec.
430.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.54 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.55 New source performance standards (NSPS).
430.56 Pretreatment standards for existing sources (PSES).
430.57 Pretreatment standards for new sources (PSNS).

Subpart F—Dissolving Kraft Subcategory

430.60 Applicability; description of the dissolving kraft subcategory.
430.61 Specialized definitions.
430.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.64 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.65 New source performance standards (NSPS).
430.66 Pretreatment standards for existing sources (PSES).
430.67 Pretreatment standards for new sources (PSNS).

Subpart G—Market Bleached Kraft Subcategory

430.70 Applicability; description of the market bleached kraft subcategory.
430.71 Specialized definitions.
430.73 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.74 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.75 New source performance standards (NSPS).
430.76 Pretreatment standards for existing sources (PSES).
430.77 Pretreatment standards for new sources (PSNS).

Subpart H—BCT Bleached Kraft Subcategory

430.80 Applicability; description of the BCT bleached kraft subcategory.
430.81 Specialized definitions.
430.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.84 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.85 New source performance standards (NSPS).
430.86 Pretreatment standards for existing sources (PSES).
430.87 Pretreatment standards for new sources (PSNS).

Subpart I—Fine Bleached Kraft Subcategory

Sec.
430.90 Applicability; description of the fine bleached kraft subcategory.
430.91 Specialized definitions.
430.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.94 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.95 New source performance standards (NSPS).
430.96 Pretreatment standards for existing sources (PSES).
430.97 Pretreatment standards for new sources (PSNS).

Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory

430.100 Applicability; description of the papergrade sulfite (blow pit wash) subcategory.
430.101 Specialized definitions.
430.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.104 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.105 New source performance standards (NSPS).
430.106 Pretreatment standards for existing sources (PSES).
430.107 Pretreatment standards for new sources (PSNS).

Subpart K—Dissolving Sulfite Pulp Subcategory

430.110 Applicability; description of the dissolving sulfite pulp subcategory.
430.111 Specialized definitions.
430.113 Effluent limitations represeting the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.114 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.115 New source performance standards (NSPS).
430.116 Pretreatment standards for existing sources (PSES).
430.117 Pretreatment standards for new sources (PSNS).

Subpart L—Groundwood-Chemi-Mechanical Subcategory

430.123 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology BCT) [Reserved].
430.124 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved].

Sec.
430.125 New source performance standards (NSPS) [Reserved].
430.126 Pretreatment standards for existing sources (PSES) [Reserved].
430.127 Pretreatment standards for new sources (PSNS) [Reserved].

Subpart M—Groundwood-Thermo-Mechanical Subcategory

430.130 Applicability; description of the groundwood-thermo-mechanical subcategory.
430.131 Specialized definitions.
430.133 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology BCT).
430.134 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable BAT).
430.135 New source performance standards (NSPS).
430.136 Pretreatment standards for existing sources (PSES).
430.137 Pretreatment standards for new sources (PSNS).

Subpart N—Groundwood-CMN Papers Subcategory

430.140 Applicability; description of the groundwood-CMN papers subcategory.
430.141 Specialized definitions.
430.143 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.144 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology econmically achievable (BAT).
430.145 New source performance standards (NSPS).
430.146 Pretreatment standards for existing sources (PSES).
430.147 Pretreatment standards for new sources (PSNS).

Subpart O—Groundwood-Fine Papers Subcategory

430.150 Applicability; description of the groundwood-fine papers subcategory.
430.151 Specialized definitions.
430.153 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.154 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.155 New source performance standards (NSPS).
430.156 Pretreatment standards for existing sources (PSES).
430.157 Pretreatment standards for new sources (PSNS).

Subpart P—Soda Subcategory

430.160 Applicability; description of the soda subcategory.
430.161 Specialized definitions.
430.163 Effluent limitations representing the degree of effluent reduction attainable by

Sec.
the application of the best conventional pollutant control technology (BCT).
430.164 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.165 New source performance standards (NSPS).
430.166 Pretreatment standards for existing sources (PSES).
430.167 Pretreatment standards for new sources (PSNS).

Subpart Q—Deink Subcategory

430.170 Applicability; description of the deink subcategory.
430.171 Specialized definitions.
430.173 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.174 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.175 New source performance standards (NSPS).
430.176 Pretreatment standards for existing sources (PSES).
430.177 Pretreatment standards for new sources (PSNS).

Subpart R—Nonintegrated-Fine Papers Subcategory

430.180 Applicability; description of the nonintegrated-fine papers subcategory.
430.181 Specialized definitions.
430.183 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.184 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.185 New source performance standards (NSPS).
430.186 Pretreatment standards for existing sources (PSES).
430.187 Pretreatment standards for new sources (PSNS).

Subpart S—Nonintegrated-Tissue Papers Subcategory

430.190 Applicability; description of the nonintegrated-tissue papers subcategory.
430.191 Specialized definitions.
430.193 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.194 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.195 New source performance standards (NSPS).
430.196 Pretreatment standards for existing sources (PSES).
430.197 Pretreatment standards for new sources (PSNS).

Subpart T—Tissue From Wastepaper Subcategory

430.200 Applicability; description of the tissue from wastepaper subcategory.
430.201 Specialized definitions.
430.203 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.204 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.205 New source performance standards (NSPS).
430.206 Pretreatment standards for existing sources (PSES).
430.207 Pretreatment standards for new sources (PSNS).

Subpart U—Papergrade Sulfite (Drum Wash) Subcategory

430.210 Applicability; description of the papergrade sulfite (drum wash) subcategory.
430.211 Specialized definitions.
430.213 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.214 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.215 New source performance standards (NSPS).
430.216 Pretreatment standards for existing sources (PSES).
430.217 Pretreatment standards for new sources (PSNS).

Subpart V—Unbleached Kraft and Semi-Chemical Subcategory

430.220 Applicability; description of the unbleached kraft and semi-chemical subcategory.
430.221 Specialized definitions.
430.223 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.224 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.225 New source performance standards (NSPS).
430.226 Pretreatment standards for existing sources (PSES).
430.227 Pretreatment standards for new sources (PSNS).

Subpart W—Semi-Chemical Subcategory

430.230 Applicability; description of the semi-chemical subcategory.
430.231 Specialized definitions.
430.233 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.234 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.235 New source performance standards (NSPS).
430.236 Pretreatment standards for existing sources (PSES).
Sec.
430.237 Pretreatment standards for new sources (PSNS).

Subpart X—Wastepaper—Molded Products Subcategory

430.240 Applicability; description of the wastepaper—molded products subcategory.
430.241 Specialized definitions.
430.242 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
430.243 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.244 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.245 New source performance standards (NSPS).
430.246 Pretreatment standards for existing sources (PSES).
430.247 Pretreatment standards for new sources (PSNS).

Subpart Y—Nonintegrated-Lightweight Papers Subcategory

430.250 Applicability; description of the nonintegrated-lightweight papers subcategory.
430.251 Specialized definitions.
430.252 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
430.253 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.254 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.255 New source performance standards (NSPS).
430.256 Pretreatment standards for existing sources (PSES).
430.257 Pretreatment standards for new sources (PSNS).

Subpart Z—Nonintegrated-Filter and Nonwoven Papers Subcategory

430.260 Applicability; description of the nonintegrated-filter and nonwoven papers subcategory.
430.261 Specialized definitions.
430.262 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
430.263 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.264 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

430.265 New source performance standards (NSPS).
430.266 Pretreatment standards for existing sources (PSES).
430.267 Pretreatment standards for new sources (PSNS).

Subpart AA—Nonintegrated-Paperboard Subcategory

430.270 Applicability; description of the nonintegrated-paperboard subcategory.
430.271 Specialized definitions.
430.272 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).
430.273 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
430.274 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
430.275 New source performance standards (NSPS).
430.276 Pretreatment standards for existing sources (PSES).
430.277 Pretreatment standards for new sources (PSNS).

Authority: Secs. 301, 304, 306, 308, and 501, Clean Water Act (Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., as amended by Clean Water Act of 1977, Pub. L. 95–217).

Subpart A—Unbleached Kraft Subcategory

§ 430.10 Applicability; description of the unbleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp and paper at unbleached kraft mills.

§ 430.11 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous discharges shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control techology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR Sections 125.30–.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart A

[Facilities where linerboard is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.5	2.0
TSS	6.2	3.7

pH—Within the range of 5.0 to 9.0 at all times.

Subpart A

[Facilities where bag paper and other mixed products are produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	4.5	2.7
TSS	7.2	4.4

pH—Within the range of 5.0 to 9.0 at all times.

§ 430.14 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations.

Concentration limitations are only applicable to non-continuous dischargers.

Subpart A

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0013	0.025
Trichlorophenol	.0016	.030

§ 430.15 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive

days limitations for BOD5 by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart A

[Facilities where linerboard is produced]

Pollutant or pollutant property	NSPS effluent limitations: Maximum for any 1 day	NSPS effluent limitations: Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	2.1	1.2
TSS	3.7	2.2
pH—Within the range of 5.0 to 9.0 at all times.		

Pollutant or pollutant property	Maximum for any 1 day: Kg/kkg (lb/1,000 lb) of product	Maximum for any 1 day: Milligrams per liter
Pentachlorophenol	0.00078	0.025
Trichlorophenol	.00094	.030

Subpart A

[Facilities where bag paper and other mixed products are produced]

Pollutant or pollutant property	NSPS effluent limitations: Maximum for any 1 day	NSPS effluent limitations: Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	3.6	2.1
TSS	5.8	3.5
pH—Within the range of 5.0 to 9.0 at all times.		

Pollutant or pollutant property	Maximum for any 1 day: Kg/kkg (lb/1,000 lb) of product	Maximum for any 1 day: Milligrams/liter
Pentachlorophenol	0.0011	0.025
Trichlorophenol	.0013	.030

§ 430.16 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works (POTWs) must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart A

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart A

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0013
Trichlorophenol	0.0016

§ 430.17 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart A

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart A

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/100 lb of product)
Pentachlorophenol	0.0013
Trichlorophenol	.0016

Subpart B—Sodium-Based Neutral Sulfite Semi-Chemical Subcategory

§ 430.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]

§ 430.24 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]

§ 430.25 New source performance standards (NSPS) [Reserved]

§ 430.26 Pretreatment standards for existing sources (PSES) [Reserved]

§ 430.27 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart C—Ammonia-Based Neutral Sulfite Semi-Chemical Subcategory

§ 430.33 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]

§ 430.34 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]

§ 430.35 New source performance standards (NSPS) [Reserved]

§ 430.36 Pretreatment standards for existing sources (PSES) [Reserved]

§ 430.37 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart D—Unbleached Kraft-Neutral Sulfite Semi-Chemical (Cross Recovery) Subcategory

§ 430.43 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT) [Reserved]

§ 430.44 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) [Reserved]

§ 430.45 New source performance standards (NSPS) [Reserved]

§ 430.46 Pretreatment standards foe existing sources (PSES) [Reserved]

§ 430.47 Pretreatment standards for new sources (PSNS) [Reserved]

Subpart E—Paperboard From Wastepaper Subcategory

§ 430.50 Applicability; description of the paperboard from wastepaper subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of paperboard from wastepaper.

§ 430.51 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.53 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart E

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	1.2	0.74
TSS	1.5	.89
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.54 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 125.32, and existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best attainable by the application of the best available technology economically achievable (BAT), except that non-continous discharges shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart E

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.00032	0.025
Trichlorophenol	0.00039	.030

§ 430.55 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart E

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
Bod*5*	1.20	0.74
TSS	1.50	0.89
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.00032	0.025
Trichlorophenol	.00039	.030

§ 430.56 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart E

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart E

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.00075
Trichlorophenol	.00090

§ 430.57 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart E

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart E

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.00075
Trichlorophenol	.00090

Subpart F—Dissolving Kraft Subcategory

§ 430.60 Applicability; description of the dissolving kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of dissolving pulp at kraft mills.

§ 430.61 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10% moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.63 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart F

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	12.2	7.2
TSS	18.6	11.3
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.64 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR Sections 125.30–.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart F

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.055	0.24
Pentachlorophenol	.0057	.025
Trichlorophenol	.0068	.030

§ 430.65 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart F

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	11.2	6.6

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
TSS	17.1	10.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	milligrams per liter
Chloroform	0.051	0.240
Pentachlorophenol	.0053	.025
Trichlorophenol	.0063	.030

§ 430.66 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart F

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart F

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0057
Trichlorophenol	.0069

§ 430.67 Pretreatment standards for new sources (PSNS)

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart F

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart F

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0057
Trichlorophenol	.0070

Subpart G—Market Bleached Kraft Subcategory

§ 430.70 Applicability; description of the market bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of market pulp at bleached kraft mills.

§ 430.71 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10% moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.73 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart G

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	10.5	6.2
TSS	13.2	8.0
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.74 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall

not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart G

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.042	0.240
Pentachlorophenol	.0043	.025
Trichlorophenol	.0052	.030

§ 430.75 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart G

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	8.2	4.8
TSS	10.2	6.2
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.032	0.240
Pentachlorophenol	.0034	.025
Trichlorophenol	.0040	.030

§ 430.76 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart G

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart G

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0043
Trichlorophenol	.0052

§ 430.77 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart G

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart G

Pollutant or pollutant property	PSNS effluent limitations (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0043
Trichlorophenol	.0052

Subpart H—BCT Bleached Kraft Subcategory

§ 430.80 Applicability; description of the BCT bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of paperboard, coarse paper, and tissue paper at bleached kraft mills.

§ 430.81 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper and paperboard production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.83 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart H

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	7.5	4.5
TSS	10.8	6.6
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.84 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart H

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.035	0.240
Pentachlorophenol	.0037	.025
Trichlorophenol	.0044	.030

§ 430.85 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart H

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	5.8	3.5
TSS	8.4	5.1
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.028	0.240
Pentachlorophenol	.0029	.025
Trichlorophenol	.0034	.030

§ 430.86 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart H

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart H

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0037
Trichlorophenol	.0044

§ 430.87 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS).

Subpart H

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart H

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0037
Trichlorophenol	.0044

Subpart I—Fine Bleached Kraft Subcategory

§ 430.90 Applicability; description of the fine bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and fine papers at bleached kraft mills.

§ 430.91 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.93 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the applicant of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart I

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	5.9	3.5
TSS	9.2	5.6
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.94 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any exising point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart I

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.031	0.240
Pentachlorophenol	.0032	.025
Trichlorophenol	.0039	.030

§ 430.95 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart I

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.8	2.3
TSS	6.0	3.6
pH—Within the range of 5.0 to 9.0 at all times.		

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.020	0.240
Pentachlorophenol	.0021	.025
Trichlorophenol	.0025	.030

§ 430.96 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart I

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart I

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0032
Trichlorophenol	.0039

§ 430.97 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart I

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart I

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day) (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0032
Trichlorophenol	.0039

Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory

§ 430.100 Applicability; description of the papergrade sulfite (blow pit wash) subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at papergrade sulfite mills, where blow pit pulp washing techniques are used.

§ 430.101 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

(e) Sulfite cooking liquor shall be defined as bisulfite cooking liquor when the pH of the liquor is between 3.0 and 6.0 and as acid sulfite cooking liquor when the pH is less than 3.0.

§ 430.103 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart J

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any one day	Average of daily values for 30 consective days
	Kg/kkg or (or pounds per 1,000 lb) of product	
BOD*5*	$0.0033x^2-0.176x+11.1$	$0.0020x^2-0.104x+6.61$
TSS	$0.0055x^2-0.291x+18.4$	$0.0033x^2-0.177x+11.2$
pH	Within the range of 5.0 to 9.0 at all times.	

x = Percent sulfite pulp in final product

§ 430.104 Effluent limitations representing the degree of effleuent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart J

Pollutant or pollutant property	BAT effluent limitations (maximum for any one day)	
	Kg/kkg (pounds per 1,000 lb) of product	Milligrams/liter
Chloroform	$(0.00912x^2-0.485x+30.72)/1,000$	0.240
Pentachlorophenol	$(0.000950x^2-0.0506x+3.2)/1,000$	0.025
Trichlorohenol	$(0.00114x^2-0.067x+30.84)/1,000$	0.030

x = Percent sulfite pulp in final product.

§ 430.105 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart J

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any one day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD*5*	$0.0025x^2-0.134x+8.46$	$0.0015x^2-0.079x+5.02$
TSS	$0.0042x^2-0.221x+14.0$	$0.0025x^2-0.134x+8.50$
pH	Within the range of 5.0 to 9.0 at all times.	
	Maximum for any one day	
	Kg/kkg (pounds per 1,000 lb) of product	Milligrams/liter
Chloroform	$(0.00693x^2-0.369x+23.4)/1,000$	0.240
Pentachlorophenol	$(0.000722x^2-0.0384x+2.43)/1,000$	0.025
Trichlorophenol	$(0.000866x^2-0.0461x+2.92)/1,000$	0.030

x = Percent sulfite pulp in final product.

§ 430.106 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart J

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart J

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), Kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	$(0.000950x^2-0.0506x+3.2)/1,000$.
Trichlorophenol	$(0.00114x^2-0.0607x+3.84)/1,000$

x = percent sulfite pulp in final product.

§ 430.107 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart J

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) Milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart J

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) Kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	$(0.000950x^2-0.0506x+3.2)/1,000$
Trichlorophenol	$(0.00114x^2-0.0607x+3.84)/1,000$.

x = percent sulfite pulp in final product

Subpart K—Dissolving Sulfite Pulp Subcategory

§ 430.110 Applicability; description of the dissolving sulfite pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp at dissolving sulfite mills.

§ 430.111 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10% moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantitites of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30

consecutive days effluent limitations set forth in this subpart.

§ 430.113 Effluent limitations representing the degree of effluent reduction attainable by the applicaton of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSSS by 1.82.

Subpart K

[Facilities where nitration grade pulp is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	41.4	21.5
TSS	70.6	38.0
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart K

[Facilities where viscose grade pulp is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	44.3	23.1
TSS	70.6	38.0
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart K

[Facilities where cellophane grade pulp is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	48.1	25.0
TSS	70.6	38.0
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart K

[Facilities where acetate grade pulp is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	52.0	27.1
TSS	70.6	38.0
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.114 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in Kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart K

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.066	0.240
Pentachlorophenol	.0069	.025
Trichlorophenol	.0083	.030

§ 430.115 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous deschargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart K

[Facilities where nitration grade pulp is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	20.3	12.3
TSS	38.5	23.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.059	0.240
Pentachlorophenol	.0062	.025
Trichlorophenol	.0074	.030

Subpart K

[Facilities where viscose grade pulp is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	21.6	12.8
TSS	38.5	23.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.059	0.240
Pentachlorophenol	.0062	.025
Trichlorophenol	.0074	.030

Subpart K

[Facilities where cellophane grade pulp is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	23.5	13.9
TSS	38.5	23.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.059	0.240
Pentachlorophenol	.0062	.025
Trichlorophenol	.0074	.030

Subpart K

[Facilities where acetate grade pulp is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	25.4	15.0
TSS	38.5	23.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.059	0.240
Pentachlorophenol	.0062	.025
Trichlorophenol	.0074	.030

§ 430.116 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart K

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart K

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0069
Trichlorophenol	.0083

§ 430.117 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart K

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart K

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0069
Trichlorophenol	.0083

Subpart L—Grounded-Chemi-Mechancial Subcategory

§ 430.123 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]

§ 430.124 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). [Reserved]

§ 430.125 New source performance standards (NSPS). [Reserved]

§ 430.126 Pretreatment standards for existing sources (PSES). [Reserved]

§ 430.127 Pretreatment standards for new sources (PSNS). [Reserved]

Subpart M—Groundwood-Thermo-Mechanical Subcategory

§ 430.130 Applicability; description of the groundwood-thermo-mechanical subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp and paper at groundwood mills through the application of the thermo-mechanical process.

§ 430.131 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect

wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.133 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart M

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.9	2.3
TSS	6.2	3.7
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.134 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart M

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0022	0.025
Trichlorophenol	.0026	.030
Zinc	.26	3.0

§ 430.135 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart M

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	1.5	0.89
TSS	2.3	1.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.00069	0.025
Trichlorophenol	.0010	.030
Zinc	.10	3.0

§ 430.136 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart M

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030
Zinc	3.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart M

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0022
Trichlorophenol	0.0026
Zinc	0.26

§ 430.137 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart M

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030
Zinc	3.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart M

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0022
Trichlorophenol	0.0026
Zinc	0.26

Subpart N—Groundwood-CMN Papers Subcategory

§ 430.140 Applicability; description of the groundwood-CMN papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and coarse paper, molded pulp products, and newsprint at groundwood mills.

§ 430.141 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.143 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart N

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	4.5	2.7
TSS	6.3	3.8
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.144 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart N

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0025	0.025
Trichlorophenol	.0030	.030
Zinc	.30	3.0

§ 430.145 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart N

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.2	1.9
TSS	4.4	2.7
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per/liter
Pentachlorophenol	0.0020	0.020
Trichlorophenol	.0024	.024
Zinc	.24	3.0

§ 430.146 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart N

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030
Zinc	1.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart N

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0025
Trichlorophenol	.0030
Zinc	.30

§ 430.147 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart N

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030
Zinc	3.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart N

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0025
Trichlorophenol	.0030
Zinc	[illegible]

Subpart O—Groundwood-Fine Papers Subcategory

§ 430.150 Applicability; description of the groundwood-fine papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and fine paper at groundwood mills.

§ 430.151 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations, such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.153 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart O

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	4.1	2.4
TSS	5.9	3.5
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.154 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart O

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	[illegible]	[illegible]
Trichlorophenol	.0027	.030
Zinc	.27	3.0

§ 430.155 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart O

Pollutant or pollutant property	NSPS effluent limitations: Maximum for any 1 day	NSPS effluent limitations: Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	2.6	1.5
TSS	3.7	2.2
pH—Within the range of 5.0 to 9.0 at all times.		

Pollutant or pollutant property	Maximum for any 1 day: Kg/kkg (lb/1,000 lb) of product	Maximum for any 1 day: Milligrams per liter
Pentachlorophenol	0.0014	0.025
Trichlorophenol	.0017	.030
Zinc	.17	3.0

§ 430.156 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart O

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030
Zinc	3.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart O

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0023
Trichlorophenol	.0027
Zinc	.27

§ 430.157 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart O

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030
Zinc	3.0

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart O

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0023
Trichlorophenol	.0027
Zinc	.27

Subpart P—Soda Subcategory

§ 430.160 Applicability; description of the soda subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at soda mills.

§ 430.161 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.163 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32 any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continous discharges shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.78 and TSS by 1.82.

Subpart P

Poluant or pollutant property	BCT effluent limitations: Maximum for any 1 day	BCT effluent limitations: Average of daily values for 30 [illegible] days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	5.9	3.5
TSS	9.2	5.6
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.164 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart P

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.031	0.240
Pentachlorophenol	.0032	.025
Trichlorphenol	.0039	.030

§ 430.165 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart P

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	*Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.8	2.3
TSS	6.0	3.6

pH—Within the range of 5.0 to 9.0 at all times.

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Chloroform	0.020	0.240
Pentachlorophenol	.0021	.025
Trichlorophenol	.0025	.030

§ 430.166 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart P

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart P

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0032
Trichlorophenol	.0039

§ 430.167 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart P

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart P

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0032
Trichlorophenol	.0039

Subpart Q—Deink Subcategory

§ 430.170 Applicability; description of the deink subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at deink mills.

§ 430.171 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above,

requires compliance with the effluent limitations established by this subpart for noncontinuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.173 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart Q

[Facilities where fine paper is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	8.9	5.3
TSS	12.5	7.6
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart Q

[Facilities where tissue paper is produced]

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	9.8	5.8
TSS	15.0	9.1
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.174 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations.

Concentration limitations are only applicable to non-continuous dischargers.

Subpart Q

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.024	0.240
Pentachlorophenol	.0025	.025
Trichlorophenol	.0031	.030

§ 430.175 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart Q

[Facilities where fine paper is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	4.2	2.5
TSS	6.0	3.6
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Chloroform	0.012	0.240
Pentachlorophenol	.0012	.025
Trichlorophenol	.0015	.030

Subpart Q

[Facilities where tissue paper is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	6.0	3.6
TSS	9.2	5.6
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Chloroform	0.015	0.240
Pentachlorophenol	.0016	.025
Trichlorophenol	.0019	.030

Subpart Q

[Facilities where newprint is produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	5.1	3.1
TSS	9.9	6.0
pH—Within the range of 50 to 9.0 at all time		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Chloroform	0.016	0.240
Pentachlorophenol	.0017	.025
Trichlorophenol	.0020	.030

§ 430.176 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart Q

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Q

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.025
Trichlorophenol	.0031

§ 430.177 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart Q

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Q

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.025
Trichlorophenol	.0031

Subpart R—Nonintegrated-Fine Papers Subcategory

§ 430.180 Applicability; description of the nonintegrated-fine papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of fine paper at nonintegrated mills.

§ 430.181 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuouse dishcarger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.183 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart R

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for 1 day	Average of daily consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.9	2.3
TSS	4.1	2.5
pH—wWithin the range of 5.0 to 9.0 at all times.		

§ 430.184 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart R

Pollutant or pollutant property	BAT effluent limitations (maximum for one 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/per liter
Pentachlorophenol	0.0016	0.025
Trichlorophenol	.0019	.030

§ 430.185 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performances standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average

effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart R

Pollutant or pollutant property	NSPS effluent limitations: Maximum for any 1 day	NSPS effluent limitations: Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	2.5	1.5
TSS	2.6	1.6
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day: Kg/kkg (lb/1,000 lb) of product	Maximum for any 1 day: Milligrams/per liter
Pentachlorophenol	0.0010	0.025
Trichlorophenol	.0012	.030

§ 430.186 Pretreatment of existing sources (PSES)

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart R

Pollutant or pollutant property	PSES effluent limitations (maximum fo rany 1 day) milligrams per liter (mg/l)
Pentacholorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart R

Pollutant or pollutant property	PSES Effluent limitations (maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0016
Trichlorophenol	.0019

§ 430.187 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart R

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day) milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart R

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0016
Trichlorophenol	.0019

Subpart S—Nonintegrated-Tissue Papers Subcategory

§ 430.190 Applicability; description of the nonintegrated-tissue papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of tissue papers at nonintegrated mills.

§ 430.191 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.193 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.79 and TSS by 1.76.

Subpart S

BCT Effluent Limitations	Pollutant or pollutant property: Maximum for any 1 day	Pollutant or pollutant property: Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	9.4	5.2
TSS	8.5	4.1
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.194 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application

of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart S

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0020	0.025
Trichlorophenol	.0024	.030

§ 430.195 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.79 and TSS by 1.76. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart S

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	6.1	3.4
TSS	5.3	2.6
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0020	0.025
Trichlorophenol	0.0024	0.030

§ 430.196 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart S

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart S

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0024
Trichlorophenol	0.0029

§ 430.197 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart S

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart S

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0024
Trichlorophenol	0.0029

Subpart T—Tissue From Wastepaper Subcategory

§ 430.200 Applicability; description of the tissue from wastepaper subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of tissue paper from wastepaper without de-inking at secondary fiber mills.

§ 430.201 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.203 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent

reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.78 and TSS by 1.82.

Subpart T

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	6.6	3.9
TSS	7.8	4.7
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.204 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart T

Pollutant or pollutant property	BAT effluent limitations, maximum for any 1 day	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0017	0.025
Trichlorophenol	0.0020	0.030

§ 430.205 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.79 and TSS by 1.76. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart T

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	6.6	3.9
TSS	7.8	4.7
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0017	0.025
Trichlorophenol	0.0020	0.030

§ 430.206 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart T

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart T

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0026
Trichlorophenol	.0032

§ 430.207 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart T

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart T

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0026
Trichlorophenol	.0032

Subpart U—Papergrade Sulfite (Drum Wash) Subcategory

§ 430.210 Applicability; description of the papergrade sulfite (drum wash) subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at papergrade sulfite mills, where vacuum or pressure drums are used to wash pulp.

§ 430.211 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured at the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10 percent moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for noncontinuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

(e) Sulfite cooking liquor shall be defined as bisulfite cooking liquor when the pH of the liquor is between 3.0 and 6.0 and as acid sulfite cooking liquor when the pH is less than 3.0.

§ 430.213. Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart U

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any one day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD*5*	$0.0033x^2-0176x+11.1$	$0.0020x^2-0.104x+6.61$
TSS	$0.0055x^2-0.291x+18.4$	$0.0033x^2-0.177x+11.2$
pH	Within the range of 5.0 to 9.0 at all times.	

x = Percent sulfite pulp in final product.

§ 430.214 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart U

Pollutant or pollutant property	BAT effluent limitations (maximum for any one day)	
	Kg/kkg (pounds per 1,000 lb) of product	Milligrams/liter
Chloroform	$(0.00912x^2-0.485x+30.72)/1,000$	0.240
Pentachlorophenol	$(0.000950x^2-0.506x+3.2)/1,000$	0.025
Trichlorophenol	$(0.00114x^2-0.0607x+3.84)/1,000$	0.030

x = Percent sulfite pulp in final product.

§ 430.215 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart U

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any one day	Average of daily values for 30 consecutive days
	Kg/kkg (or pounds per 1,000 lb) of product	
BOD*5*	$0.0025x^2-0.134x+8.46$	$0.0015x^2-0.079x+5.02$
TSS	$0.0042x^2-0.221x+14.0$	$0.0025x^2-0.134x+8.50$
pH	Within the range of 5.0 to 9.0 at all times.	

	Maximum for any one day	
	Kg/kkg (pounds per 1,000 lb) of product	Milligrams/liter
Chloroform	$(0.00693x^2-0.369x+23.4)/1,000$	0.240
Pentachlorophenol	$(0.000722x^2-0.0384x+2.43)/1,000$	0.025
Trichlorophenol	$(0.000866x^2-0.0461x+2.92)/1,000$	0.030

x = Percent sulfite pulp in final product.

§ 430.216 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pullutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart U

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart U

Pollutant or pollutant property	PSES effluent limitations—maximum for any 1 day (kg/kkg (or lb/1,000lb) of product)
Pentachlorophenol	$(0.000950\ x^2 - 0.0506\ x + 3.2)/1{,}000$
Trichlorophenol	$(0.00114\ x^2 - 0.0607\ x + 3.84)/1{,}000$

x = percent sulfite pulp in final product

§ 430.217 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart U

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart U

Pollutant or pollutant property	PSNS effluent limitations—maximum for any 1 day kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	$(0.000950\ x^2 - 0.0506\ x + 3.2)/1.000$
Trichlorophenol	$(0.00114\ x^2 - 0.0607\ x + 3.84)/1.000$

x = percent sulfite pulp in final product

Subpart V—Unbleached Kraft and Semi-Chemical Subcategory

§ 430.220 Applicability; description of the unbleached kraft and semi-chemical subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp and paper at combined unbleached kraft and semi-chemical mills, wherein the spent semi-chemical cooking liquor is burned within the unbleached kraft chemical recovery system.

§ 430.221 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.223 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.78 and TSS by 1.82.

Subpart V

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	5.3	3.1
TSS	[illegible]	5.3

pH—Within the range of 6.0 to 9.0 at all times.

§ 430.224 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart V

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0015	0.025
Trichlorophenol	.0018	.030

§ 430.225 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart V

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*4*	3.4	2.0
TSS	5.7	3.4
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.00095	0.025
Tricholorophenol	0.0011	0.030

§ 430.226 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart V

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart V

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0015
Trichlorophenol	0.0018

§ 430.227 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart V

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart V

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0015
Trichlorophenol	0.0018

Subpart W—Semi-Chemical Subcategory

§ 430.230 Applicability; description of the semi-chemical subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper at semi-chemical mills.

§ 430.231 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.233 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart W

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	5.3	3.1
TSS	7.2	4.4
pH—Within the range of 6.0 to 9.0 at all times.		

§ 430.234 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart W

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0011	0.025
Trichlorophenol	0 0013	0.030

§ 430.235 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart W

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.3	1.9
TSS	4.5	2.7
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00067	0.025
Trichlorophenol	0.00080	0.030

§ 430.236 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart W

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart W

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0011
Trichlorophenol	0.0013

§ 430.237 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart W

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart W

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0011
Trichlorophenol	0.0013

Subpart X—Wastepaper—Molded Products Subcategory

§ 430.240 Applicability; description of the wastepaper-molded products subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of molded products from wastepaper without deinking at secondary fiber mills.

§ 430.241 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30

consecutive days effluent limitations set forth in this subpart.

§ 430.242 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart X

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	4.4	2.3
TSS	10.6	5.8
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.243 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82

Subpart X

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	1.8	1.1
TSS	3.5	2.1

Subpart X—Continued

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.244 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart X

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00059	0.025
Trichlorophenol	0.00071	0.030

§ 430.245 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart X

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kkg or (lb/1,000 lb) of product	
BOD*5*	1.8	1.1

Subpart X—Continued

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
TSS	3.4	2.1
pH—Within the range of 5.0 to 9.0 at all times		

Pollutant or pollutant property	Maximum for any 1 day	
	kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.00059	0.025
Trichlorophenol	0.00071	0.030

§ 430.246 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart X

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart X

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0017
Trichlorophenol	0.0021

§ 430.247 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart X

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.0025
Trichlorophenol	0.0030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart X

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0017
Trichlorophenol	0.0021

Subpart Y—Nonintegrated-Lightweight Paper Subcategory

§ 430.250 Applicability; description of the nonintegrated-lightweight papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of lightweight paper at nonintegrated mills.

§ 430.251 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous dicharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.252 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.79 and TSS by 1.76.

Subpart Y

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	23.9	13.2
TSS	21.6	10.6
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart Y

(Facilities where electrical grade papers are produced)

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	37.9	20.8
TSS	34.0	16.7
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.253 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.79 and TSS by 1.76.

Subpart Y

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	18.9	10.4
TSS	16.9	9.3
pH—Within the range of 5.0 to 9.0 at all times.		

Subpart Y

(Facilities where electrical grade papers are produced)

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	32.8	18.1
TSS	29.5	14.4
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.254 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart Y

Pollutant or pollutant property	BAT effluent limitations—maximum for any 1 day	
	Kg/kkg(lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0040	0.025
Trichlorophenol	.0048	.030

Subpart Y

[Facilities where electrical grade papers are produced]

Pollutant or pollutant property	BAT effluent limitations—maximum for any 1 day	
	Kg/kkg(lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0070	0.025
Trichlorophenol	.0084	.030

§ 430.255 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD_5 and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD_5 by 1.79 and TSS by 1.76. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart Y

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kkg (or lb/1,000 lb) of product	
BOD[5]	12.1	6.7
TSS	10.4	5.1
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg(lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0040	0.025
Trichlorophenol	.0048	.030

Subpart Y

[Facilities where electrical grade papers are produced]

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	kg/kkg (or lb/1,000 lb) of product	
BOD[5]	21.3	11.7
TSS	18.3	8.9
pH—Within the range of 5.0 to 9.0 at all times.		

	Maximum for any 1 day	
	Kg/kkg(1b/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0070	0.025
Trichlorophenol	.0084	.030

§ 430.256 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart Y

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) (milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Y

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0051
Trichlorophenol	.0061

Subpart Y

[Facilities where electrical grade papers are produced]

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day) Kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0080
Trichlorophenol	.0096

§ 430.257 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart Y

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) Milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Y

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) Kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0051
Trichlorophenol	0.0061

Subpart Y

[Facilities where electrical grade papers are produced]

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day) Kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0080
Trichlorophenol	0.0096

Subpart Z—Nonintegrated-Filter and Nonwoven Subcategory

§ 430.260 Applicability; description of the nonintegrated-filter and nonwoven subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of filter and nonwoven papers at nonintegrated mills.

§ 430.261 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in

terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.262 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the averge of 30 consecutive days limitations for BOD5 by 1.79 and TSS by 1.76.

Subpart Z

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	29.4	16.2

Subpart Z—Continued

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
TSS	26.6	13.0

pH—Within the range of 5.0 to 9.0 at all times.

§ 430.263 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations for BOD5 *by 1.79 and TS by 1.76.*

Subpart Z

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	23.4	12.9
TSS5	21.1	10.3

pH—Within the range of 5.0 to 9.0 at all times.

§ 430.264 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart Z

Pollutant or pollutant property	BAT effluent limitations (maximum for any 1 day)	
	Kg/kkg (lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0050	0.025
trichlorophenol	0.0059	0.030

§ 430.265 New source performance standards (NSPS)

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD5 and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD5 by 1.79 and TSS by 1.76. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart Z

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD5	15.1	6.3
TSS	13.0	6.4

pH—Within the range of 5.0 to 9.0 at all times.

	Maximum for any 1 day	
	Kg/kkg (lb/1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0050	0.025
Trichlorophenol	0.0059	0.030

§ 430.266 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart Z

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Z

Pollutant or pollutant property	PSES effluent limitations (maximum for any 1 day), kg/kkg (or lb/1,000 lb) or product
Pentachlorophenol	0.0062
Trichlorophenol	0.0075

§ 430.267 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart Z

Pollutant or pollutant property	PSNS effluent limitations (maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	0.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart Z

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0062
Trichlorophenol	.0075

Subpart AA—Nonintegrated-Paperboard

§ 430.270 Applicability; description of the nonintegrated-paperboard subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of paperboard at nonintegrated mills. The production of electrical grades of board and matrix board is not included in this subpart.

§ 430.271 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is probibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.272 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations of BOD*5* by 1.79 and TSS by 1.76.

Subpart AA

Pollutant or pollutant property	BPT effluent limitation	
	Maximum for one 1 day	Average of daily values of 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	6.3	3.5
TSS	5.8	2.8
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.273 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.79 and TSS by 1.76.

Subpart AA

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for one 1 day	Average of daily values of 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	6.3	3.5
TSS	5.8	2.8
pH—Within the range of 5.0 to 9.0 at all times.		

§ 430.274 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration

limitations are only applicable to non-continuous dischargers.

Subpart AA

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0013	0.025
Trichlorophenol	.0016	.030

§ 430.275 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.79 and TSS by 1.76. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart AA

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	3.5	1.9
TSS	3.1	1.5
pH—Within the range of 5.0 to 9.0 at all times.		

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0012	0.025
Trichlorophenol	.0014	.030

§ 430.276 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart AA

Pollutant or pollutant property	PSES effluent limitations (Maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart AA

Pollutant or pollutant property	PSES effluent limitations (Maximum for any one day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0013
Trichlorophenol	.0016

§ 430.277 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart AA

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day), milligrams per liter (mg/l)
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart AA

Pollutant or pollutant property	PSNS effluent limitations (Maximum for any 1 day), kg/kkg (or lb/1,000 lb) of product
Pentachlorophenol	0.0013
Trichlorophenol	.0016

It is proposed to amend Title 40 by revising Part 431 to read as follows:

PART 431—THE BUILDERS' PAPER AND BOARD MILLS POINT SOURCE CATEGORY

Subpart A—Builders' Paper and Roofing Felt Subcategory

Sec.

431.10 Applicability; description of the builders' paper and roofing felt subcategory.
431.11 Specialized definitions.
431.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).
431.14 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).
431.15 New source performance standards (NSPS).
431.16 Pretreatment standards for existing sources (PSES).
431.17 Pretreatment standards for new sources (PSNS).

Authority: Secs. 301, 304, 306, 308, and 501, Clean Water Act (Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., as amended by Clean Water Act of 1977, Pub. L. 95-217).

Subpart A—Builders' Paper and Roofing Felt Subcategory

§ 431.210 Applicability; description of the builders' paper and roofing felt subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of builders' paper and roofing felt from wastepaper.

§ 431.11 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be measured in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be

deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect wastewater treatment levels that are representative of application of best practicable control technology currently available or best conventional pollutant control technology in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 431.13 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82.

Subpart A

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	5.0	3.0
TSS	5.0	3.0
pH—Within the range of 5.0 to 9.0 at all times.		

§ 431.14 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT), except that non-continuous dischargers shall not be subject to the maximum day mass limitations in kg/kkg (lbs/1,000 lbs), but shall be subject to concentration limitations. Concentration limitations are only applicable to non-continuous dischargers.

Subpart A

Pollutant or pollutant property	BAT effluent limitations (Maximum for any 1 day)	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.0015	0.025
Trichlorophenol	.0018	.030

§ 431.15 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following new source performance standards (NSPS), except that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days effluent limitations for BOD*5* and TSS, but shall be subject to annual average effluent limitations determined by dividing the average of 30 consecutive days limitations for BOD*5* by 1.78 and TSS by 1.82. Also, for non-continuous dischargers, concentration limitations (mg/l) shall apply, where provided. Concentration limitations will only apply to non-continuous dischargers.

Subpart A

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Kg/kkg (or lb/1,000 lb) of product	
BOD*5*	1.5	0.87
TSS	2.2	1.3
pH—Within the range of 5.0 to 9.0 at all times.		

	(Maximum for any 1 day)	
	Kg/kkg (or lb/1,000 lb) of product	Milligrams per liter
Pentachlorophenol	0.00027	0.025
Trichlorophenol	.00033	.030

§ 431.16 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for existing sources (PSES):

Subpart A

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart A

Pollutant or pollutant property	PSES effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0015
Trichlorophenol	.0018

§ 431.17 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources (PSNS):

Subpart A

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (milligrams per liter (mg/l))
Pentachlorophenol	0.025
Trichlorophenol	.030

In cases when POTWs find it necessary to impose mass effluent limitations, the following equivalent mass limitations are provided as guidance:

Subpart A

Pollutant or pollutant property	PSNS effluent limitations—Maximum for any 1 day (kg/kkg (or lb/1,000 lb) of product)
Pentachlorophenol	0.0015
Trichlorophenol	.0018

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